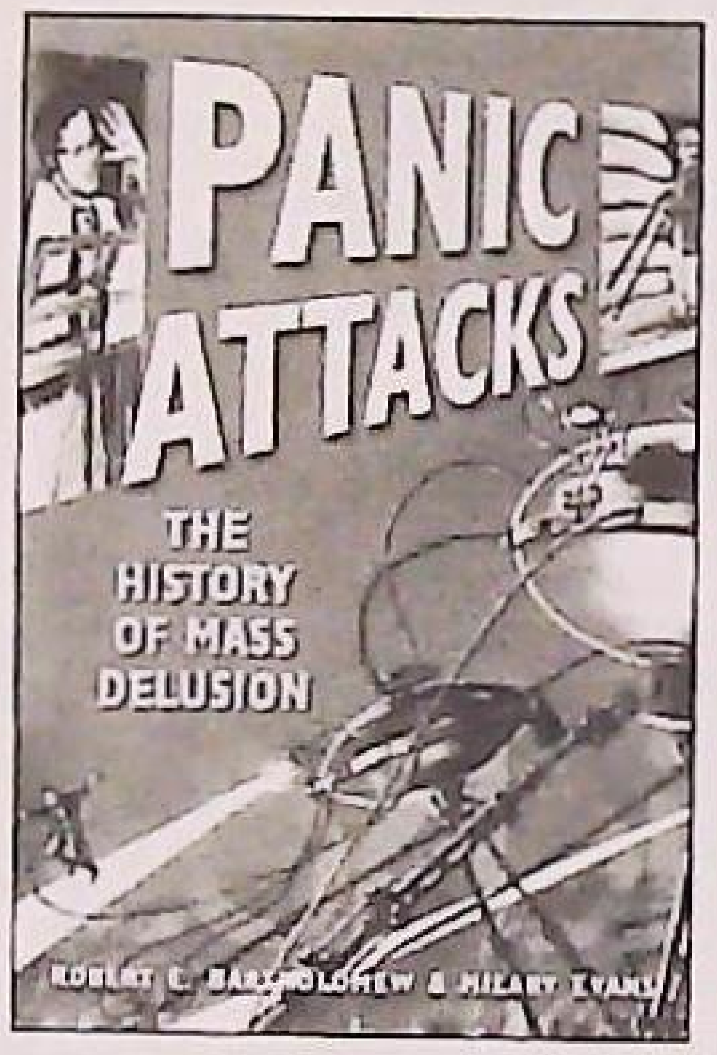
ON MEDIA DELUSIONS AND IVAN SANDERSON: TWO REVIEWS

BY JEROME CLARK

Robert E. Bartholomew and Hilary Evans, *Panic Attacks: Media Manipulation and Mass Delusion*. Stroud, Gloucestershire, England: Sutton Publishing, 2004. 222p.

Panic Attacks did me a favor. As I was reading it, I realized that while long ago I'd read Howard Koch's script for Orson Welles's notorious Mercury Theater presentation of *The War of the Worlds*, I had never actually heard the broadcast itself. So I put the book down midway through Chapter Three ("The *War of the Worlds* Spooks a Nation: How It Happened"), found a tape of the show, and listened to it. Knowing perfectly well that it was no more than science fiction, in the dark of a December late afternoon I still felt chills. Possibly because it is radio and you have to imagine the (obviously unreal) events yourself, it's a whole lot scarier than you'd think. Himself a genius, Welles was working with a spectacularly talented theatrical company, and all concerned knew exactly how to put a story over the radio. The effect is to make one reflect on the power of media—in the good sense—and not as purveyor of "manipulation and mass delusion."


PANIC ATTACKS
THE HISTORY OF MASS DELUSION
ROBERT E. BARTHOLOMEW & HILARY EVANS

In the early 21st century we seldom think about media in any positive way. I learned to detest our media in the run-up to the Iraq war, during which even the putatively best news services (the *New York Times* and CNN, for two particularly infuriating examples) chose to conduct themselves as if they were state-run media, doing nothing to stem tidal waves of official mendacity and hysteria-mongering. The bold-faced lies and manufactured paranoia led, as could have been predicted (and was predicted by some, whose patriotism was of course furiously assailed), to disaster, quagmire, and tens of thousands of needless deaths and injuries, with no end in sight. Robert Bartholomew and Hilary Evans have a few choice words to say on this particularly fatal instance of manipulation and delusion, but mostly the book deals with media hoaxes, misrepresentation, and irresponsibility of sorts that are largely or entirely innocuous by comparison.

"The Great Moon Hoax of 1835," the subject of the first chapter, was a yarn cooked up by the *New York Sun* to sell newspapers to an untapped audience, ordinary working people. While we all can agree that newspapers ought to print hard news and not colorful fantasy, anyone who believed reports of bat- and beaver-people on the moon surely deserved to (and was just as surely entertained for his or her efforts) and probably learned a needed lesson—that something isn't necessarily true just because it's in print—in the end. And as far as we know, no panic attacks resulted. In any case, belief in an inhabited moon in 1835 had nothing on the even more widespread belief—aided and abetted by the media of the early 19th century—that African Americans, being an inferior race, could live and die in bondage and no white citizen need give it a second thought.

The most harmful matter Bartholomew and Evans chronicle is the epidemic of phony sex-molestation charges which made headlines in the 1980s. The culprits here, though, seem less media than quack psychotherapists, who peddled pseudoscience about "repressed memories" of incest, and goggle-eyed fundamentalists, who promoted belief in "satanic ritual abuse" (SRA), predicated on the staggeringly improbable notion that America houses a vast network of closet devil-worshipping, murderous sex fiends.

The authors point to the obvious parallel of witch scares in centuries past but don't remark on one disturbing possibility, which occurred at least to this reader: If you can get millions of people to believe (with no evidence to speak of) in a vast Scratch-obsessed underground, couldn't you get them to believe that people who hold social and political views uncongenial to the Christian right are witches—*literally*? If (as recent polling suggests) 45% of our fellow citizens are of the opinion that *Homo sapiens* was magically brought into existence in its present form less than 10,000 years ago, surely you could get people to believe anything.

It would be naïve indeed to blame all this on "media manipulation," though "mass delusion" certainly is an apt characterization of this lamentable, though so far hypothetical, prospect.

Bartholomew and Evans sometimes come across as a trifle hyperbolic in their attacks on what is typically less media manipulation than just plain, old-fashioned bad journalism. Nonetheless they are, on the whole, clear thinkers and lucid writers (notwithstanding the unexpected, unwelcome appearance of the nonword "orientated" on page 87), and their judgments are nearly always balanced. Their book, in other words, is mercifully devoid of CSICOP-style hyperventilation, and their prose is happily jargon-free. UFO matters, on which the authors have written at length elsewhere, are mentioned very briefly, and then only in passing and in a reasonable context.

Most of their case studies will be familiar to informed readers, but a few were new to me, most interestingly the one in Chapter Nine, where the authors show how journalists' ethnocentrism and unconscious racism caused them to conjure up, for the amusement of "civilized" readers, a nonexistent cult of Lyndon B. Johnson worshippers on a remote South Pacific island.

All in all, *Panic Attacks* is a solid popular guide to the subject, never less than entertaining and readable.

Ivan T. Sanderson and Robert Gribble, Vols. 1 and 2. Albuquerque, N.Mex.: Faded Discs. Available from Wendy Connors, Box 8552, Albuquerque, NM 87198.

Wendy Connors's Faded Disc Project is unique in preserving the sounds of UFO history: interviews, radio shows, lectures, private chitchats. If you love ufology's history and miss—as those of us with a few miles on us are wont to do—the old days, otherwise known as the Golden Age, you'll want to have all of them. So far 10 have been issued, all on compact discs. Nine and 10, from the collection of longtime ufologist Robert Gribble, document a 1960 lecture Ivan T. Sanderson (1911–1973) gave in, I believe, Seattle. Between them, running time is approximately two and a half hours.

Though only those of us with long memories are likely to recall Sanderson, he was once a ubiquitous figure in UFO and Fortean circles. He was also something of a television star, a regular on such popular programs as Dave Garroway's *Today Show* and Garry Moore's evening variety show. To the larger public he was known as an explorer and authority on animals, especially mammals, specimens of which he would drag on stage for the wonderment and amusement of the 1950s American viewing audience. He was a tall, striking-looking man with a charming British accent and a witty, articulate, supremely assured way of putting things. He was, in short, the perfect guest.

To a smaller, more focused audience he was famous for more exotic interests. He pioneered cryptozoology before the discipline had a name. As early as 1948, in a *Saturday Evening Post* article, he declared his conviction that dinosaurs survive in remote regions of the earth. Exposed to Charles Fort at an early age, he paid attention to flying saucers when they emerged on the world scene. Twenty years later, he wrote a not very good book on the subject, *Uninvited Visitors*, and followed it up with an outright crazy book, *Invisible Residents* (1970), which advances the argument that the earth's oceans harbor hidden beings with an advanced technology, including UFOs. I believe it was in the latter book that he wrote the funniest phrase I've ever seen in a UFO book, when he suggested that other intelligences—"OINTS" in Sandersonese—may be "overcivilized and quite mad."

One could say the same of Sanderson, whose erudition was often in service to ideas that were as often as not borderline lunatic, though he had the occasional lucid moment. I never met him, though I talked with him on the phone one day in December 1967 while I was visiting John Keel, an eccentric of markedly less sunny disposition, in his Manhattan apartment. Persons who knew Sanderson personally loved him and thought him the greatest of raconteurs. These two discs preserve Sanderson in full, delightful form, answering questions, chatting, speculating, gossiping, and clearly enjoying his audience and himself in equal measure.

With Sanderson, who never let strict factual accuracy get in the way of a good story (Isabel Davis, who knew him well and liked him, privately deemed him an amiable child), it's never wise to believe anything without a second, more reliable source. But the stories are entertaining and occasionally illuminating. On the first disc I especially enjoyed the yarns, alternately colorful and tragic, of New Jersey contactee and Sanderson friend Howard Menger. Sanderson chatters on about Sasquatch, then an obscure presence in North America's popular culture, as well as werewolves, official UFO secrets, and more.

On the second disc he is full of dark warnings about "Communist influences" on the contactee movement, practically accusing George Van Tassel of being a Soviet agent. Most contactees, he says, are merely "idiots," but a few are "dangerous characters" pushing subversive ban-the-bomb and "love thy brother" doctrines. Less silly and more attention-inviting are his observations on 1950s UFO author Morris K. Jessup's last months. He insists, as do others familiar with the circumstances, that Jessup's suicide, conspiratorial speculations notwithstanding, owed to personal problems unrelated to ufology. But Sanderson confuses *The Case for the UFO*—the book that crackpot Carl Allen marked up in the persona of three Spanish Gypsies—with the later *UFO and the Bible*.

Sanderson is not the only one speaking. So are members of Gribble's group, with voices sometimes piling on top of each other as they talk or argue with one another as Sanderson is holding forth. Sometimes you have to struggle to hear what's being said. It's all, or mostly, good stuff, a window into the lost world of ufology when UFOs were fresh and startling revelations seemed just over the horizon. ✦

Yet, today this is totally forgotten. And whatever information that still survives about Ivan is scattered and

FATE
MAY 1968
page 132-133
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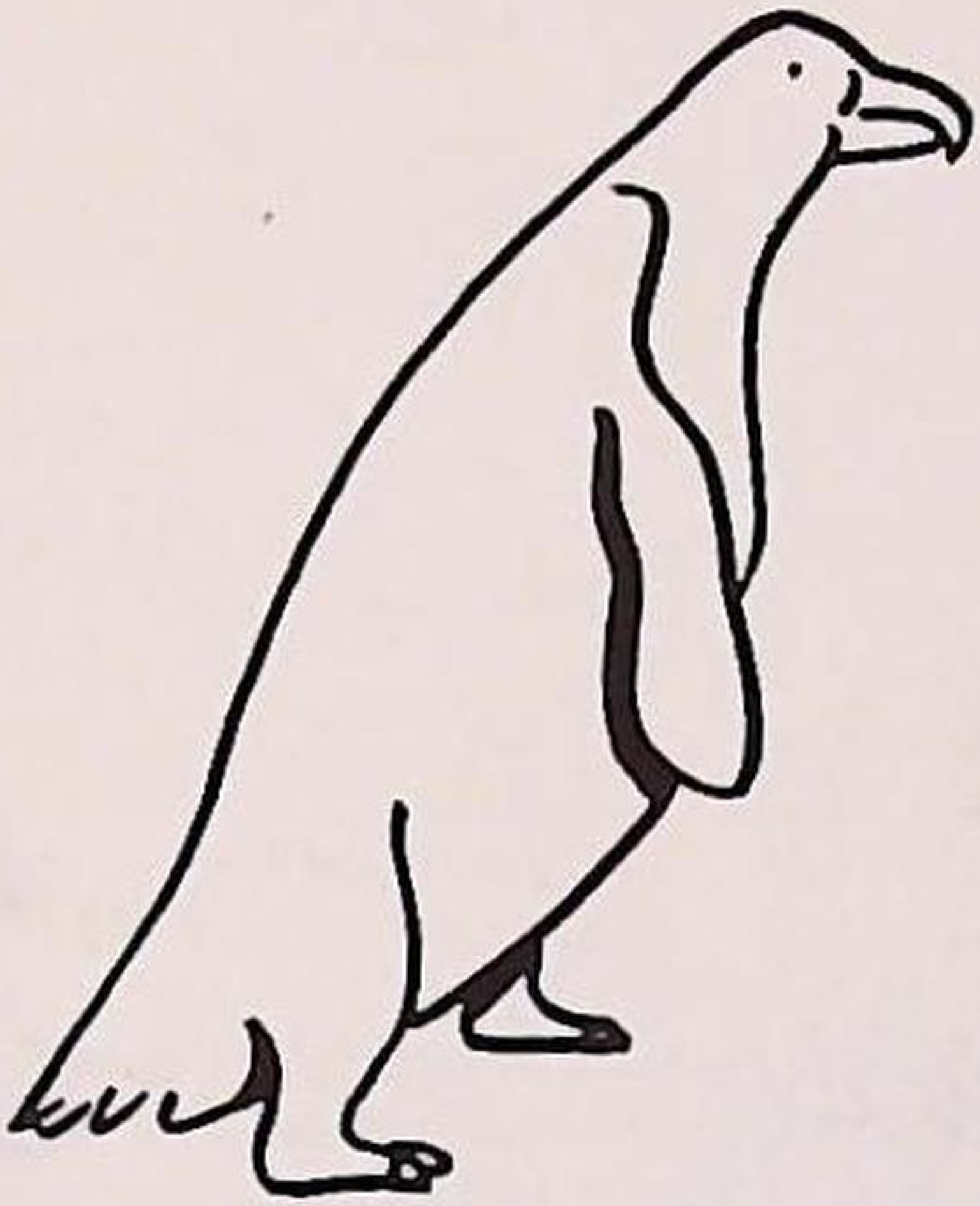

Could you possibly print some "retraction" or whatever it's called on an illustration? —*Ivan T. Sanderson, Blairstown, N.J.*

THE SEARCH

I would like to find persons who can look at a map (a road map, one printed in an atlas or almost any type of map) and by marking a spot on the map tell where an article has been lost or hidden.

In past years I have read of persons with this ability and I am hoping that among your readers I may find one.—*Armen Gamperling, Berkeley, Calif.*

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the Durham area in parapsychology. I was founder and first president of the North Carolina Parapsychology Society. Through the years I have experienced many marvelous things.

Some months ago when Bishop Pike released to the press his experience in contacting his deceased son (See FATE, February, 1967) Dr. J. B. Rhine here in Durham rushed into print stating his usual negative opinion on Bishop Pike's experience.

Since I am connected with a local radio station I suggested to our news director that he interview Dr. Rhine on the subject of personality survival. It is a subject dear to my own heart. The interview took place on a Friday while I was away from the radio station. When I returned I asked the news director to play the tape recording of his interview with Dr. Rhine. Imagine his amazement to find the tape blank! Such a thing never before has happened to him and he is a very competent reporter.

The weekly newscast was set for Sunday so he called Dr. Rhine to see if he would grant him another interview. This was not possible but Dr. Rhine sent in his stead his wife Dr. Louisa E. Rhine to the station on Saturday morning.

I sat in my office about 75 feet away from the control room while our news director taped his 30-minute interview was Mrs. Rhine. As soon as she left I asked to hear her tape. Again to the news director's consternation only 12 minutes of the interview was on the tape. Mysteriously, her negative attitude on personality survival simply had not recorded. What was on the tape was played over the air on Sunday.

Was I responsible? Am I unconsciously a poltergeist?—*Dr. C. K. Rand, Durham, N.C.*

SILLY OLD THREE-TOES

I am quite distressed to see the illustration used with the first installment of my article, "That Forgotten Monster, Old Three-Toes" (December, 1967, FATE). Your artist, the dear boy, must have read the manuscript backwards or something. The illustration looks like a rhino. *Why?*

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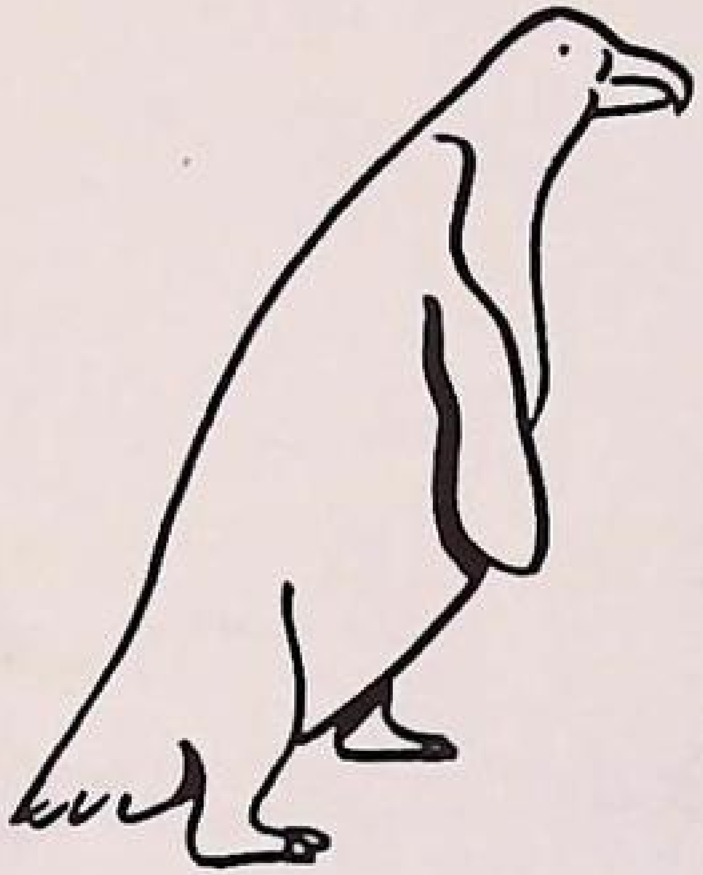

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WPEN, Philadelphia, at which time she had already conceived of the Land of the Lost as a story but not as a radio program. She was one of the first women newscasters and covered the Hauptmann case and the Democratic National Convention in 1936. She billed herself as "the petticoat on the air."

In 1939 she hit the jackpot with a program called Morning Market Basket, which she is still doing six days a week, three on CBS (Tuesdays, Thursdays, Saturdays, 9:45-10 a.m. EWT) and three on Blue (Mondays, Wednesdays, Fridays, 10-10:15 a.m. EWT). This program is all a housewife needs to listen to: Miss Hewson gives market reports, recipes, menus, household hints, and even a story to tell at dinner time.

SCIENCE

Mechanical Ant

Slick-walled holes, 20 feet across and thousands of feet deep, can be drilled through the earth's solid rock crust with a mechanical ant, which for the first time lets miners sink large shafts without explosives. The new rock-chewing monster, most revolutionary of recent mining innovations, was described last week by Andrew R. Boone, Los Angeles science writer.

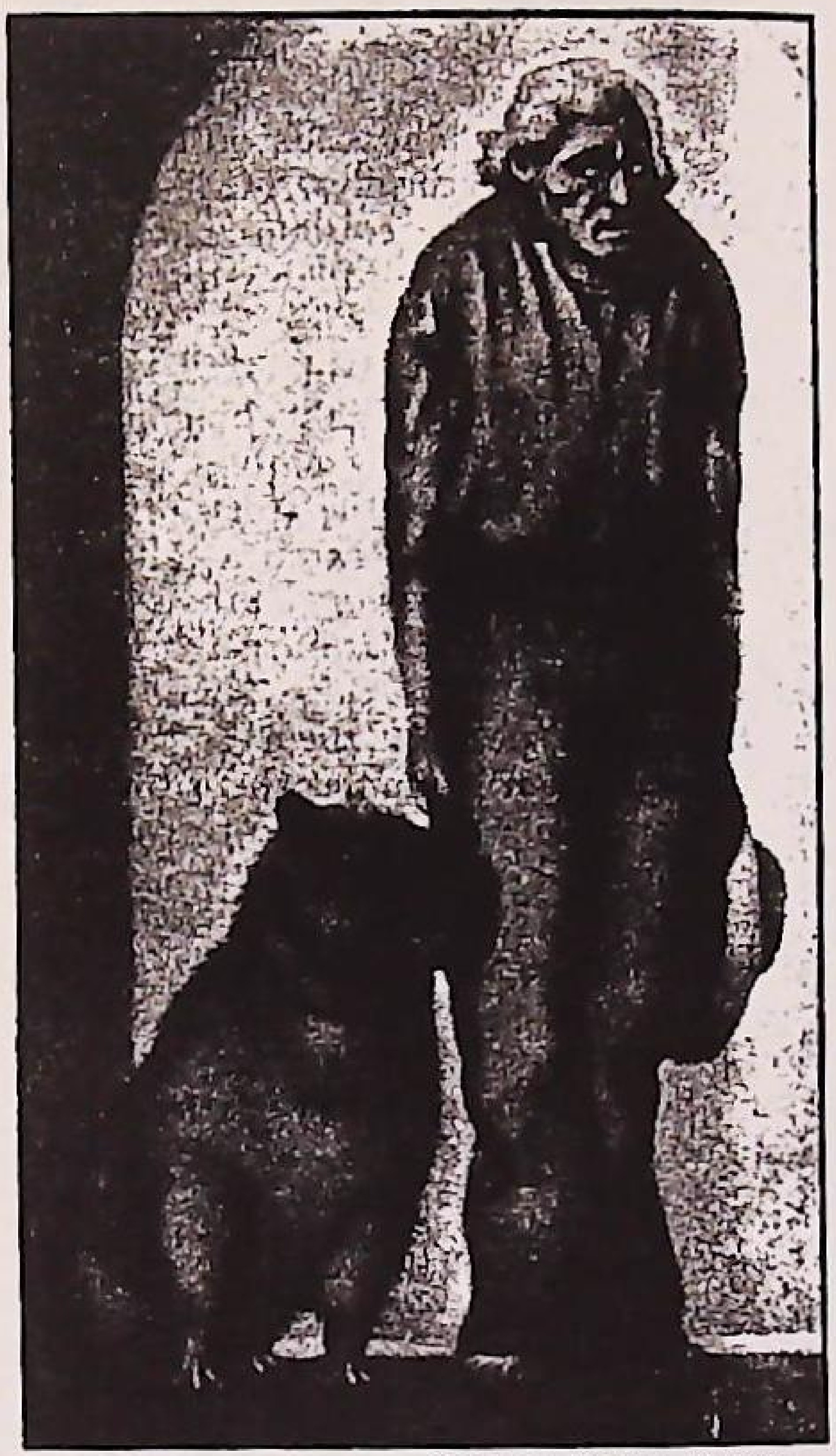
It was J. B. Newsom, onetime quarrier of Indiana limestone who later taught mining engineering at Stanford University, who evolved the technique of boring shafts by cutting out a succession of solid rock cores weighing 30 tons each. With his first experimental machine the inventor sank a 5-foot shaft 1,125 feet into the workings of the Idaho-Maryland gold mine in Grass Valley, Calif. Completing a more voracious "ant," he next bored a 5½-foot hole through 1,206 feet of hard rock to the fourteenth level of the Zenith iron mine in Minnesota. The same machine, now 1,100 feet down, last week was busily gobbling out a 3,000-foot hole at the Cary iron mine, Hurley, Wis.

Unlike orthodox core drills which are powered by an extension shaft leading to an engine on the surface, Newsom's machine carries its power with it. His drill consists of two parts, a cylindrical compartment housing an electric motor, and the corer (operating it is a bit like revolving a biscuit cutter in a cake of soap) which is connected to the motor by a short steel shaft and gears. Iron shot pellets in the teeth of the barrel-like corer serve as the actual cutting tool as the corer spins at 52 revolutions per minute.

Guinea Gargantua

A pathos-packed story of a gargantuan guinea pig (200 pounds and 2 feet high at the shoulder) which for years served her aged blind master faithfully and efficiently in the role of a seeing-eye dog is told in the current Nature Magazine by Ivan T. Sanderson, explorer and author. The odd animal was a capybara, a member of the guinea-pig family—so large that at first glance it was as startling as a house cat the size of a horse.

Rima, as Sanderson's household staff soon named her, had guided her charge unfalteringly about a little village in Surinam (Dutch Guiana) and back and forth "along the winding jungle trails to the river bank where he boarded the launch to come to the market town . . . predicting accurately and unfailingly with her rodent brain his every movement, searching out with her lustrous eyes and sensitive nose the safe path that he should tread."


Courtesy Nature Magazine

A giant guinea was his seeing eye

When the old man thought he was soon to die he prevailed upon Sanderson to buy Rima and care for her. "Capybaras," Sanderson writes, "are tailless and have bodies not unlike well-fed pigs, clothed in short, coarse, reddish-brown hair. The face of a capybara . . . is a mixture of guinea pig, horse, and lioness. The muzzle is square and raised haughtily like a caricature of a pompous elderly duchess."

Not unnaturally the natives used to stare when they saw Sanderson driving about in an ancient Rolls-Royce accompanied by a guinea pig seemingly larger than himself. The explorer's tribute: "I have never since felt a bond of friendship so close to any other living creature . . . With the aloofness and independence of a cat, and the devotion and faithfulness of a dog, she combined the clear thinking of an able lawyer and the economy of a water turbine."

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The Gorilla an Actual Brother of Man? 27 March 1938
American Weekly Magazine San Francisco Examiner, Calif
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If Sanderson's theory survives the attacks it must face, it will mean that there is no "missing link" between modern man in his airplane and the hairy giant of the anthropoids, for they are both to be considered as humans or to have once been subhumans together. The missing link then would be a fossil linking the ancestors of the chimpanzee and other unquestioned apes on one side, with the ancestors of modern man and the gorilla on the other.

At a time so remote that perhaps it will never be known, some urgent reason moved a number of African Samsons to leave the local Philistines on the lowlands where life was comparatively easy and take to the mountain fastnesses.

If stone-age Delilahs were sent after them, they must have failed because, according to the Sanderson theory, these rugged individuals not only grew hairier but bigger and stronger, while the men of the lowlands remained puny and hairless, possibly originating the almost universal ancient belief, exemplified in the Samson story, that hairiness and muscular strength go together.

These mountain Samsons who could have carried away the gates of a city or performed any of the Biblical strong man's feats with one hand, fell behind the plainsmen in communication, weapons and all the other tricks which can only be developed when men live together in communities, even though most of them live *as slaves. Nevertheless the muscular hermits of the mountains retained many human characteristics, including the distinctly human invention of tying knots in creepers when they build a sleeping platform in the trees strong enough to hold their 700 pounds of bone and muscle.*

"Man-Beef" the Natives of Assumbo in the Gorilla Country Call the G
Brute, Says Explorer Sanderson, and This Stuffed Gorilla at the Amer
Museum of Natural History Shows Extraordinary Human Characteri

In his fascinating African jungle book, "Animal Treasure," published by the Viking Press, New York, Sanderson relates that the idea did not originate with him but came to him from what he considers a better and older authority, the people of Assumbo. The opinion of some African savages, such as the Bokis, may not be worth asking on much of anything, but the Assumbos he had found to be the reliable type of character which made their opinion worthy of respect on any matter with which they were familiar. He writes:

"The people of Assumbo believe gorillas to be another race of men, and not an animal at all. The chimpanzee is, on the other hand, a great monkey to them and only aping man. They are an honest people and not given to imaginative story-telling, and as they probably see more gorillas and know more of their habits than does any other group of human beings in the world, I think their opinions should at least be listened to.

"They affirm that there is no case in their memory of gorillas trying to carry off women, which would be the first thing they would pretend gorillas did if they wished to confirm their statement that these apes are really men. I myself, as a zoologist, naturalist, and an ordinary sane person, am in absolute agreement with the Assumbos. Seeing these creatures in life, listening to their calls and talk and examining them both alive and dead alongside chimpanzees and men, I can only regard them and treat them as a retrograde form of human or at least subhuman life.

"They not only have hands, faces and, to a certain extent, feet like our own, but they use them in exactly the same manner as we do. Their speech contains as many different sounds and types of sounds as any human language. They have constructive ability, shown in building platforms, using sticks and sorting out objects, that is on a par with that of some adult humans.

Photograph of a Gorilla Hiding Along the Trail and Watching a File of Travelers; It Is the Gorilla's Curious Habit to Pop Out and Take a Big Bite Out of the Last Man in the Line, Says Explorer Sanderson.

"Furthermore, they bear strong family likenesses and equally well-marked inter-family differences. The natives of these mountains live alongside the gorillas and know all the families by sight, so that they can tell you, more or less, in which district one will meet certain parties, what they will look like and how many of them there will be.

"Scientists have been at great pains to define a number of races of gorillas. There are undoubtedly two, the mountain and the plains forms, the latter being really distinct and confined to a small area in the East. I have seen in Assumbo a greater variety of color, shape and size among gorillas, within a small area than all that displayed by the so-called sub-races, from all over Africa where the gorilla is met with.

"Individual gorillas vary and show family resemblances just like men. One family may have bright-red crests on their heads, even the very young, another may be almost entirely silvery-gray in color, and others almost jet-black. Of course there are, apart from these, certain colors that go with age, notably gray hair, as among men.

"We spent a great deal of time hunting gorillas with our friend Afa. George once actually got right among a large party, listened to them burping over their food, was bawled at by the old male and saw them beating their chests with their clenched fists.

"I inspected several of their 'nests,' which are really great platforms raised a few feet from the ground and constructed for use during the night's rest when on the move from one feeding ground to another. These were formed by bending saplings inward and placing on top of this springy mattress a mass

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"THE GORILLA is not really one of the apes but a retrograde form of human, or at least subhuman, life."

This startling opinion, contrary to accepted scientific belief, is set forth by no less an authority that Ivan T. Sanderson, British zoologist, naturalist, Fellow of the Linnean Society and of the Royal Geographic Society. More important than his scientific honors, in this particular question, is the fact that he is also one of those rare individuals, an authority on gorillas, having actually studied them in their native haunts.

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San Francisco Examiner, Calif

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27 March 1938 American Weekly Magazine page 5

sider From Direct Human, or Possibly Subhuman Stock, Thinks Explorer Sanderson, and Tells Why He and the Tribes in Gorilla Land Are Convinced of It

The French Sculptor Fremiet's Famous Statue, "Abduction by a Gorilla," Embodying a Tradition of African Natives That These Manlike Monsters Sometimes Carry Away Women From the Villages.

"Man-Beast" the Natives of Assumbo in the Gorilla Country Call the G
Brute, Says Explorer Sanderson, and This Stuffed Gorilla at the Amer
Museum of Natural History Shows Extraordinary Human Character

"THE GORILLA is not really one of the apes but a retrograde form of human, or at least subhuman, life."

This startling opinion, contrary to accepted scientific belief, is set forth by no less an authority that Ivan T. Sanderson, British zoologist, naturalist, Fellow of the Linnean Society and of the Royal Geographic Society. More important than his scientific honors, in this particular question, is the fact that he is also one of those rare individuals, an authority on gorillas, having actually studied them in their native haunts.

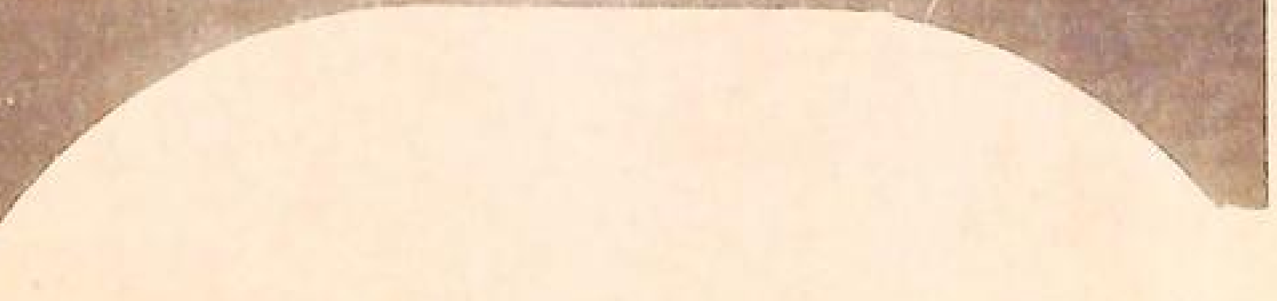
If Sanderson's theory survives the attacks it must face, it will mean that there is no "missing link" between modern man in his airplane and the hairy giant of the anthropoids, for they are both to be considered as humans or to have once been subhumans together. The missing link then would be a fossil linking the ancestors of the chimpanzee and other unquestioned apes on one side, with the ancestors of modern man and the gorilla on the other.

At a time so remote that perhaps it will never be known, some urgent reason moved a number of African Samsons to leave the local Philistines on the lowlands where life was comparatively easy and take to the mountain fastnesses.

If stone-age Delilahs were sent after them, they must have failed because, according to the Sanderson theory, these rugged individuals not only grew hairier but bigger and stronger, while the men of the lowlands remained puny and hairless, possibly originating the almost universal ancient belief, exemplified in the Samson story, that hairiness and muscular strength go together.

These mountain Samsons who could have carried away the gates of a city or performed any of the Biblical strong man's feats with one hand, fell behind the plainsmen in communication, weapons and all the other tricks which can only be developed when men live together in communities, even though most of them live as slaves. Nevertheless the muscular hermits of the mountains retained many human characteristics, including the distinctly human invention of tying knots in creepers when they build a sleeping platform in the trees strong enough to hold their 700 pounds of bone and muscle.

In his fascinating African jungle



27 March 1938 San Francisco Examiner, Calif

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Comparative Photographs of the Right Hands of a Gorilla and a Man—the Resemblance Is Astonishingly Close, Even to the Lines Across the Palms. The Hands of No Other Apes Have Such Similarity.

The Gorilla Baby Goes Into a Temper Just Like a Human Child and With About the Same Expression and Gestures.

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of leafy branches, torn from the surrounding trees. Among these I counted more than two dozen complete knots, made in the creepers and saplings to hold them down. They were mostly 'grannies,' but there were three real 'reef' knots (one of which I cut out and kept) which had undoubtedly resulted only by chance. The size of some of the branches torn and ripped to make these platforms was quite staggering and bore testimony to the terrific strength of these creatures.

"That the male gorilla will usually attack on sight, or rather, as soon as he knows he has been seen, is an undoubted fact, at least in Assumbo. When he does so, he stands erect and gathers the branches in his arms before him to screen himself. Is there anything but a human that would do this?"

There are other tales suggesting that sometimes it is even worse when the gorilla sees human trespassers but is not seen by them. For instance, when Assumbo natives traverse gorilla territory they avoid as much as possible the usual and convenient method of marching in single file. When, as often happens, this is unavoidable, the most dangerous and unpopular position is not leader of the file but the last man.

This is because the gorillas have a quaint habit of hiding until the last man is passing when they reach out and bite a huge mouthful of muscle from his thigh, and vanish. Sanderson was shown two men who had been crippled by these bites but was told that most such victims die, presumably from blood-poisoning.

This strategy of taking just one quick nip from only the last man reveals that the gorilla has as profound an understanding of the Assumbo man as that thoughtful colored man has of his mighty neighbor, thinks Sanderson. If the gorilla should attempt to bite the leader or anyone else except the very last man he would get speared or shot by the man just behind. As it is, the gorilla gets away unscathed and, until someone devises a pair of iron pants for last men to wear, these nip-and-run tactics will continue to have as much moral effect in reducing traffic through gorilla territory as if the powerful creatures risked attacking the whole party.

Coming upon the body of a male specimen weighing between 600 and 700 pounds, that had been shot by a native hunter, the author expresses his feelings as follows:

"I shall never quite forget the emotions that this sight conjured up inside of me. I had always been taught to think of the gorilla as the very essence of savagery and terror, and now there lay this hoary old vegetarian, his immense arms folded over his great pot belly, all the fire gone from his wrinkled, black face, his soft brown eyes wide open beneath their long, straight lashes and filled with an infinite sorrow.

"Into his whole demeanor I could not help but read the tragedy of his race, driven from the plains up into the mountains countless centuries ago by more active ape-like creatures—perhaps even our own forebears; chevied hither and thither by the ever-encroaching hoardes of hairless, shouting little men, his young ones snatched by leopards, his feeding grounds restricted by farms and paths and native huntsmen.

"All around him was a changing world, against which he bellowed his defiance to the end, rushing forward to meet the bits of lead blasted at him by his puny rival. At last the Munchis came and the sad old man was lashed to two young trees and borne away by 30 staggering, chanting humans, away from the silence of the mists, away from his last, tangled stronghold; yet not quite the last of the giants and not quite unmourned."

But why did the stout fellows, ancestors of these giants, leave the more favorable plains to their feebler fellow humans or subhumans? One may easily suspect a plausible cause. It probably came about at the dawn of organization in Africa, the beginning of community life. Little organizations of a few families fought others of similar size, carefully keeping away from certain extra-husky Samsons.

But finally family enslaved family until tribes grew so powerful in numbers that no one of these Samsons could stand against them.

The weakness of the rugged individualist is that he always plays a lone hand and gets pulled down, one at a time, by the pack. Finally it became a choice of being exterminated or retreating to the mountain wilderness.

There, as outlaws but still unorganized individualists, they gained in strength and certain kinds of cunning but their mental development, as a whole, came to a stop. Only a very small side branch of the breed managed to survive in the lowland jungles.

Fascinating speculations arise regarding certain similarities of habits among gorillas and Negro natives. Everyone who has seen a gorilla is impressed by his characteristic habit of beating his breast with the same horny knuckles on which he walks when going on all fours. The gorilla has a huge chest, as round and almost as big as a barrel and when he thumps it, the great cavity of the lungs reverberates as if he were beating a drum, producing a sound that can be heard for three miles.

Is it possible that when the gorilla's ancestors took to the mountains, most everyone had a big enough chest to use as a drum but that later the human native's chest shrank until, as today, it became an inefficient noise-maker?

Anyhow, while the gorilla still beats his, the Negro has invented an artificial chest, the African tom-tom drum, which he still thumps with his knuckles, gorilla style, but is able to send his message many times farther than the biggest and mightiest chest-pounder.

Another curious thought arises about a custom still persisting in many African tribes of not burying the bodies of chiefs and other tribal dignitaries but exposing them on platforms high up in trees to be devoured by carnivorous birds.

To just such a platform the gorilla today retires to die of sickness or wounds and there the birds often devour him as they do the smaller body of the chief or witch doctor.

Magic and mysticism often carry on in their rituals customs that were once universal and useful but have been so long abandoned that the tribe itself has forgotten that it ever had such a custom.

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LOCATION: NEW YORK, NEW YORK
DATE: 21 AUGUST 1955
VOLUME CIV, NUMBER 35,638
PAGE 1, COLUMN 5-8; PAGE 47, COLUMN 1-8

"All the News
That's Fit to Print"

The New York Times.

LATE CITY EDITION
Mostly fair and hot today and tomorrow.
Temperature Range Today-Max., 95; Min., 76
Temperature Yesterday-Max., 94.8; Min., 74.5
Full U. S. Weather Bureau Report, Sec. 5, Page 11

UMMARY AND INDEX, PAGE 95

CIV. No. 35,638.

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NEW YORK, SUNDAY, AUGUST 21, 1955.

Including Magazine and Book Review

SECTION ONE

TWENTY-FIVE CENTS

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Page 2, Column 4

ports News

EBALL

Soviet to Free 3 Americans; 2 Are G.I.'s Missing 7 Years

U. S. Requested Release of Privates After Former Captives From Other Lands Told of Soldiers' Imprisonment

Special to The New York Times.

WASHINGTON, Aug. 20—Three Americans, including two United States soldiers missing for seven years, are being released from Soviet prisons.

The State Department announced today that the Soviet Foreign Office had informed the United States Embassy in Moscow of the imminent release of the three men.

They are Wilfred C. Cumish, United States Army private, missing from his post in Vienna more than seven years; Murray Fields, United States Army private, missing from his unit in Germany more than seven years, and Frederick Charles Hopkins, about whom nothing is known.

Cumish, 39, is a native of Amesbury, Mass. Fields, 36, also known as Feingersch, is a native of Brooklyn, N. Y.

The Army said both Fields and Cumish were classed on its records as deserters. It said they would be subject to arrest and trial upon their return to American custody. According to the Army, they were absent without leave from their organizations when they disappeared behind the Iron Curtain in 1948.

The release of Cumish and Fields had been requested by the United States Embassy in Moscow July 16, shortly after the fact that they were in Soviet prisons had become known.

Information on the presence of the two had been obtained from nationals of other countries who had themselves been released from Soviet prisons. Yesterday, the Soviet Foreign Office advised the United States that the men would be freed and added the unexpected information that

Continued on Page 21, Column 2

Reds Returning One Flier; Other Died in Korea Plane

By The United Press.

PANMUNJOM, Korea, Sunday, Aug. 21—The North Korean Communists admitted today holding a United States Air Force lieutenant who was shot down by Red guns over the Korean demilitarized zone. The Communists said a second United States officer in the downed plane was dead.

At a meeting of the Joint Military Armistice Commission the Reds said they captured Second Lieutenant Guy H. Bumpass Jr. of Jackson, Miss., the pilot of the T-6 training plane shot down Wednesday.

The Communists said that Capt. Charles W. Brown of West Louisville, Ky., Army observer in the trainer, was killed in the crash of the plane, downed by Red anti-aircraft fire.

Maj. Gen. Jung Kooh Rok of North Korea told Maj. Gen. Harlan C. Parks, senior United Nation delegate on the commission that Lieutenant Bumpass would be returned to the United Nations Command on Tuesday within the demilitarized zone.

Body to Be Brought Back

General Jung said that Captain Brown's body would be turned over to the United Nations Command at the same time.

General Parks said that the United Nations Command was not certain the captain died in the crash or from anti-aircraft fire.

"When the body is returned," he said after the meeting, "we will examine it to determine whether he was killed in the crash or by artillery fire."

General Parks protested bitterly to the Communists for their "unprovoked and muderous" attack on the unarmed plane.

He told the Reds that just one day after the United States plane was shot down, a Communist plane was spotted over United Nations territory within the range of United Nations anti-aircraft batteries.

"But despite a strong resentment," he said, "we did not fire on it."

The Communist agreement to

Continued on Page 4, Column 4

SOVIET DISCLOSES SECRET FARM DATA

Grain Harvest Seen Falling Far Short of Goal—U. S. Experts Offer Ideas

By WELLES HANGEN
Special to The New York Times.

MOSCOW, Aug. 20—The Soviet Union's grain harvest this year will fall considerably short of the reduced goal of 114,000,000 metric tons set by the Government.

The first official disclosure of this country's failure to fulfill the vital grain production plan was made here today by Ivan A. Benediktov, Minister of State Farms, during a conference with the United States agricultural delegation.

The two-and-one-half-hour session between the twelve American visitors and leading Soviet agriculture officials was unusual. Mr. Benediktov and his colleagues divulged quantities of statistical information on crop acreages, farm labor and related subjects that had been held in the closest secrecy throughout the history of the Soviet regime.

Moreover, Soviet officials accepted in good grace and without serious objection a series of suggestions for changes in this country's farm program offered by the Americans. The visitors yesterday completed a month-long tour of the principal Soviet agricultural regions.

Criticism by Americans

The United States experts formulated the following criticisms of the Soviet agricultural system:

¶Farm labor is expended with extravagance while materials, machinery and other production facilities are similarly wasted on many collective and state farms.

¶The intensive program to expand corn production is being pursued even in areas of deficient rainfall where sorghums or legumes could be more eco-

SECRECY IS EASED AS ATOMIC PARLEY IN GENEVA CLOSES

Nations Expected to Share Knowledge of Peaceful Uses of Nuclear Energy

By WILLIAM L. LAURENCE
Special to The New York Times.

GENEVA, Aug. 20—The first International Conference on the Peaceful Uses of Atomic Energy came to a close here this afternoon after a fortnight of historic sessions. During them the United States, the Soviet Union, Britain, France and other nations shared hitherto closely guarded secrets of how to harness the vast energy of the atom for the benefit of mankind.

The conference marked the end of an era of secrecy on matters relating to knowledge about controlled uses of atomic energy for power and for improving the health, wealth and happiness of mankind everywhere. From now on it is expected that the nations will share their knowledge freely about the peaceful uses of atomic energy, reserving to themselves only those items that relate to military use.

While no formal mention was made during the two weeks of sessions about the prospects for international control of atomic weapons delegates from seventy-two countries in private conversations were generally agreed that the new spirit of international cooperation that marked the conference throughout would also serve as an opening wedge for removing obstacles still standing in the way of reaching an agreement on such controls.

Knowledge-Sharing Stressed

Cooperation among the scientists, delegates said, will remove political barriers. The sharing of knowledge, they are convinced, will demonstrate to the leaders of all nations that a nuclear reactor that promises to bring power and wealth in abundance to all peoples is a weapon vastly more powerful than any hydrogen bomb—a weapon that will make the hydrogen bomb and war itself anachronisms.

The conference ended with the reading by its president, Prof. Homi J. Bhabha of India, of a message from Soviet Premier Nikolai A. Bulganin that caused tumultuous applause. The message read:

"The International Conference on Peaceful Uses of Atomic Energy now drawing to a close in Geneva is a significant step toward the establishment of international cooperation in the most important field of the utilization of atomic energy for peaceful purposes.

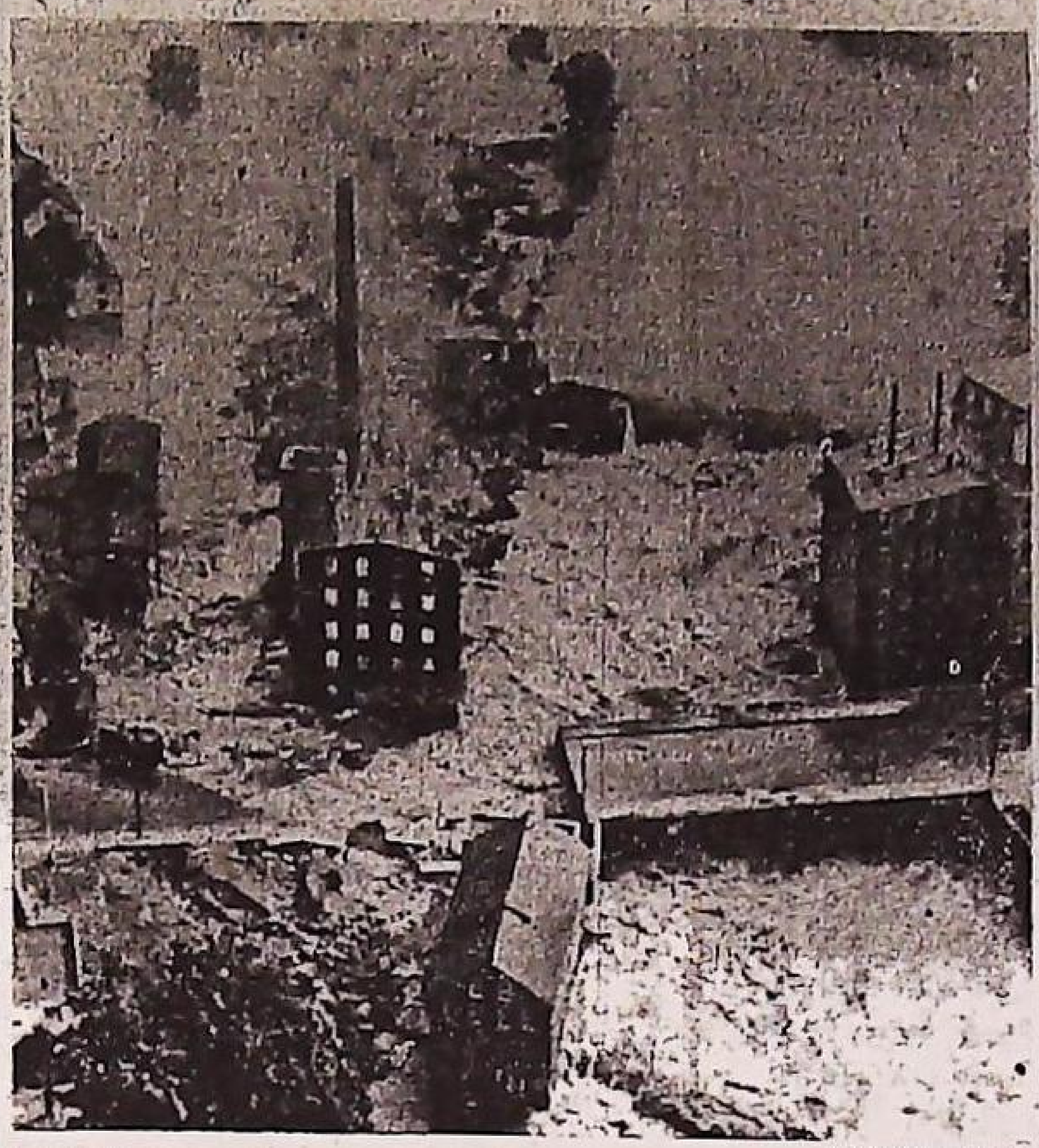
"The exchange of views and information which has taken place at the conference represents a valuable contribution to further scientific and technical progress in this field.

"This conference will undoubtedly serve the cause of peace and make for a further relaxation of international tension.

"The Soviet Government congratulates all those taking part in the conference on the success achieved and expresses hope that the international cooperation in the field of peaceful utilization of atomic energy which has been so successfully inaugurated at this conference will be continued through the regular convening of

Continued on Page 34, Column 1

FLOOD TOLL IS 143 AS RIVERS RECEDE; 31 LOST AT CAMP IN THE POCONOS; PRESIDENT SPEEDS DISASTER RELIEF



Associated Press Wirephoto

CONNECTICUT PLANT BURNS IN FLOOD: Smoke rises from the Metal Sellers Corporation in Putnam after two-day fire. Hundreds of barrels of exploding magnesium from the plant floated about the business district on flood waters, setting other fires. Rising river washed out the roadway in front of plant, preventing firemen from reaching blaze.

6 STATES DIG OUT

Thousands Housed by Red Cross—3 Cities in Rhode Island Hit

By EDWIN L. DALE JR.

A six-state area in the northeastern United States counted 143 deaths yesterday, with the full measure of damage from Friday's floods still to be assessed.

Besides the known dead scores were reported missing. The final toll was far from complete.

The Red Cross set aside $2,000,000 for preliminary relief and reported it had cared for 9,000 homeless Friday night. This figure did not approach half of all those who were flooded out of their homes.

In Fraser, Colo., President Eisenhower moved to make Federal aid immediately available to six stricken states. He declared Pennsylvania, Connecticut, Massachusetts, South Carolina and "all flooded areas" of New Jersey and the Woonsocket, R. I., zone major disaster areas.

Rhode Island became a late addition to the distress list as the Blackstone joined the rivers on the loose. Gov. Dennis J. Roberts estimated damage at $150,000,000 in Woonsocket, Central Falls and Pawtucket.

The day's most agonizing news came from the Poconos in Pennsylvania, where thirty-one persons apparently lost their lives as the flood burst upon their summer camp.

However, in the six-state area generally, a combination yesterday of dry skies, dikes and sandbags kept new flood destruction to a minimum. Rivers all over the Northeast—including the Blackstone—were falling back from their flood peaks.

Disease Threat Remains

Disease remained a serious menace in parts of Connecticut and Pennsylvania, and pure water was a problem in several dozen soggy communities.

A state-by-state summary of flood conditions follows:

CONNECTICUT: Forty-three dead. Thirteen communities declared "health hazard areas," endangered by polluted water and contaminated food. Damages greatest in the Naugatuck River Valley. Litchfield, Torrington, Waterbury, Winsted, Ansonia, Seymour, Naugatuck and Putnam were hardest hit. Winsted, with a population of 9,000 was virtually isolated. National Guard troops were flown in to keep order.

NEW JERSEY: Five dead. Gov. Robert B. Meyner said the state had suffered a "catastrophe" and was promised Federal aid. High water forced 1,000 persons to flee their homes in Trenton.

NEW YORK: Four were known to be dead. Governor Harriman declared Port Jervis and its environs a disaster area, but said no state money was available for relief. Receding rivers left damage estimated in the millions in six counties in the southeastern part of the state.

MASSACHUSETTS: Thirteen

Continued on Page 47, Column 3

JERSEY DECLARED A DISASTER ZONE

Meyner Describes Conditions in the West as Appalling—5 Dead, 3,000 Homeless

By GEORGE CABLE WRIGHT
Special to The New York Times

TRENTON, Aug. 20—President Eisenhower today declared New Jersey a disaster area. This promise of Federal aid followed a plea for assistance by Gov. Robert B. Meyner and Representative Frank Thompson Jr.

Later the Governor made a three-hour inspection flight. He called conditions in western New Jersey appalling.

The death toll in the state is five. More than 3,000 persons have fled their homes. Property damage is expected to reach hundreds of millions of dollars.

The deluge, which began yesterday when the Delaware River and her tributaries burst over their banks, had by this afternoon inundated much of the Delaware Valley.

Four Delaware River bridges were destroyed. Three others were damaged and are in danger of collapse. Many small bridges and roads are badly damaged or washed out.

The Delaware crested at twen-

Continued on Page 48, Column 1

Connecticut Waters Fall; Havoc Shocks Army Aide

By MERRILL FOLSOM
Special to The New York Times

HARTFORD, Aug. 20—Waters receded and the sun shone today to bare Connecticut's deep gashes from yesterday's record floods. Secretary of the Army Wilber M. Brucker arrived by plane and flew over the stricken areas by helicopter. He declared the disaster was so great he was making immediate assignments of engineers and funds to restore transportation and public health.

Alighting from the helicopter he telephoned to President Eisenhower in Colorado. Within an hour, the President sent the following wire to Gov. Abraham A. Ribicoff:

"As you requested, I have today declared a 'major disaster,' under public authority of Public Law 875, in the areas of the State of Connecticut which have been damaged by floods.

"I have allotted to the Federal Civil Defense Administration such funds for Federal assistance as are necessary to supplement state and other efforts.

"I am deeply concerned with the hardship and suffering caused the people of your state by this flood."

Eighty thousand persons were driven from their homes by the swollen rivers. Most of them

Continued on Page 46, Column 3

DEATH TOLL HIGH IN POCONOS CAMP

Several From New York and Jersey Are Still Missing—Stroudsburg Toll Large

Special to The New York Times.

EAST STROUDSBURG, Pa., Aug. 20—Chaos and benumbed shock overlie this area today, in the wake of the worst flood in its history.

There are thirty bodies in one funeral home alone, and no one knows how much higher the figure will go. Some estimates are at least 100. Helicopter pilots this afternoon reported seeing at least nine bodies floating in the still wildly overflowing Delaware River.

The greatest concentrated tragedy was at Camp Davis, the summer colony of fourteen modest bungalows near Analomink three miles northwest of here. More than forty persons, most of them women and children from New York and New Jersey were vacationing at the camp.

The toll at Camp Davis was twelve persons known dead and

City's Heat at 94.8°

to a depth of ten feet.

Most of the dead in Stroudsburg were from the Silk Mill Flat section, where the odor of natural gas fumes was strong. Authorities await results of autopsies to determine whether the victims were drowned or died from the fumes.

A staff of sixty-six doctors and nurses was sent to Stroudsburg from Reading to treat the homeless and injured.

The Delaware River creasted at forty feet early this morning, smashing a fifty-two-year record of twenty-eight and one-tenth feet. It was sixteen feet above flood level. Part of a Northampton Street bridge there was washed away. All electric lights were cut in the central business section of Easton.

Five persons were listed as dead and one missing in Scranton, where Mayor James T. Hanlon closed all business establishments and public places because of fire hazard. Many residents were without drinking water.

In Bethlehem, the Bethlehem Steel Company plant was shut down by floods in its buildings.

All major roads were closed in Tamaqua. Five bridges there were out of service for varying periods.

Bucks County Is Hard Hit

In the greater Philadelphia area most of the homeless were in Bucks County, north of the city, where the Delaware River and the usually calm Neshaminy Creek went on rampages.

Fifty miles of Bucks County waterfront along the Delaware from Upper Black Eddy to Bristol were under fifteen feet of water at the flood crest last night and early today.

Many families also were homeless along the Neshaminy. Bucks County Civil Defense Director J. R. Fell said that the flood crest was reached throughout most of the stricken area early today.

The Delaware River was receding today, leaving masses of debris along its banks and lowlands. The Schuylkill River, which also overflowed, began settling back to normal, too.

All along the Delaware River, churches, school buildings and fire houses were opened to refugees, and the Red Cross set up emergency stations, field kitchens and distribution centers for blankets and other disaster necessities.

A thousand persons were evacuated from 300 homes in a low-lying five-mile section along West State Street and Sanican Drive in West Trenton and Ewing Township. In Phillipsburg, N. J., across the Delaware from Easton, Pa., 200 were evacuated as water rushed into the plaza near the Easton Bridge.

PHONE CALLS DELAYED

Company Reports Faulty Links With Flooded Areas

The New York Telephone Company reported yesterday that it was having trouble putting through calls to flooded areas in Connecticut, Massachusetts, New Jersey and Pennsylvania.

The company said it was making all efforts to expedite communication and that "alternative routes have been established wherever possible."

"Conditions at many of the distressed points," it added, "are still so critical that it cannot be determined at this time when the situation will measurably improve."

ways and [illegible] widened.

Damage was estimated at over a billion dollars. The Massachusetts Public Works Commissioner, John A. Volpe, said the cost to repair state highways alone would be about $6,500,000.

State police rushed food to stricken families in Charlton, Oxford and Southbridge. Only cold edibles were transported because cooking facilities and power were not available in several communities.

The shortage of water and the danger of pollution brought a warning to flood-ravaged towns to boil all drinking water before using it.

Death Toll Is 13

The death toll stood at thirteen but many persons were missing or unaccounted for.

In Charlton several automobiles were under water and rescuers had not been able to reach them to determine if they held passengers.

Railroads resumed service on some lines. But there were no trains running out of Springfield. A newsman who flew over the western sector reported seeing tracks buckled and ties splintered.

The main highway from Boston to New York—Route 20—was impassable. It appeared that it would be days before it could be opened to traffic.

In Southbridge, near the Rhode Island line, a three-family house floated on its side like a doll house in a tub. The American Optical Company there reported its loss would reach $10,000,000.

Eleven thousand families were without water in Worcester's north end because of [illegible] in the high pressure system. A state of emergency was in force in the city and all counties to the west.

The Army is supplying water purification tablets in stricken areas. C rations, blankets and mattresses were shipped to Southbridge and Auburn.

Boston Health Commissioner John H. Cauley said the loss of food because of power failures in refrigeration units was severe.

About 45,000 telephones were out in Massachusetts and Rhode Island, most of them in western Massachusetts.

River Water Subsides

Special to The New York Times

SPRINGFIELD, Mass., Aug. 20—The waters of the Connecticut River and its tributaries gradually subsided in western Massachusetts today. Under a blazing sun weary workers toiled to remove the traces of $25,000,000 damage caused by two days of relentless rain.

With two persons known dead and possibly a few bodies yet to be found, the stricken area counted scores of bridges washed away, gaping holes in main highways and whole neighborhoods flooded or digging out of clinging silt.

The danger of even more disastrous flooding abated as the Connecticut grudingly receded toward its normal channels. The rains induced by Hurricane Diane failed to spread much farther north than Northampton and Hadley, Mass., and robbed the river of added power upstream once the downpour ended late yesterday afternoon.

The river crested at Springfield at 7:00 P. M. yesterday at a height of 21.1 feet. The waters thereafter began to recede at the rate of about six inches an hour. By noon today the crest was 15/15 feet.

The towns of Monson and Pal- of mud and silt that was the town green. The town actually was cut in two by the raging waters of the Chicopee River.

Road at Westfield

The city of Westfield remained isolated today with the exception of a single road to the south. Along this poured a stream of emergency cars and supply trucks.

The Boston and Albany Railroad out of Springfield is expected to be idle for several more days because of washouts. The New York, New Haven and Hartford Railroad began operating a shuttle service to New York. Buses, using the lone route south left open, took passengers to Berlin, Conn., where they were able to board trains.

The city of Holyoke, using snow plows and every other available piece of highway equip-

As today developed hot and humid, thousands of tourists who had been holed up in motels, hotels and tourist homes since Thursday hopefully took to the road. Some were continuing north to continue vacations. Others were headed to the south and west to return to their jobs.

Many businesses were running short-handed in the isolated cities and towns because of the inability of workers to commute from outlying areas.

The narrow back roads, customarily known only to local residents, were lined with crawling vehicles using such byways for detours.

At the various state police barracks in the flood areas crude signs gave tourists directions for making detours. At hamlets of the back roads local police and civil defense workers were posted at intersections to give directions and to keep traffic moving.

AS RIVERS RECEDE

Continued From Page 1

were dead and several were missing. Most seriously battered were Springfield, Chicopee, Holyoke and Worcester, but the danger from flooded rivers seemed to have passed. Emergency kitchens were set up to feed thousands of homeless and 11,000 families in Worcester had no drinking water.

PENNSYLVANIA: The known dead totaled seventy-four and eighty persons were missing. Gov. George M. Leader said rehabilitation and reconstruction would be a "major problem for months to come." The heaviest death and destruction toll was in the area of Stroudsburg in the Pocono

ton, Easton, Hazleton, Tamaqua, Reading, Wilkes-Barre and Pottstown.

RHODE ISLAND: One person was dead. The Blackstone River flooded Woonsocket and 500 families were evacuated. Almost the entire city, with a population of 50,000, was without drinking water.

VIRGINIA: Three were known to be dead, but the worst appeared to be over. Damage was estimated at three to four million dollars in scattered areas.

The best news yesterday came from Hartford and Philadelphia: The Connecticut, Delaware and Schuylkill Rivers would do no more damage. The Connecticut swept past Hartford at levels that once would have brought major devastation, but the city went untouched because of dikes built after the 1936 floods.

The Delaware pushed some water into low areas of Trenton and Burlington, N. J., but carried no serious threat to Philadelphia and Camden farther downstream.

New devastation was wrought at Pellet's Island, near Middletown, N. Y., last night when the Wallkill River forced the evacuation of about seventy-five persons in the Celery Avenue section. The river had risen at the rate of seven inches an hour all afternoon.

Perhaps the most unwelcome additions to the news were the reports from communities that had suffered heavily but could not even get the word out on Friday.

For example, there was the town of Putnam in northeastern Connecticut. While attention was concentrated in the western part of the state, Putnam not only was flooded by the Quinebaug and French Rivers but also was burned and blasted by exploding magnesium. A magnesium plant there went up in flames and explosions lasted throughout the night.

In Fraser the President was in touch during the day with Secretary of the Army Wilber M. Brucker and acting Secretary of Defense Ruben R. Robertson. The armed services had already gone into action before the President's order.

Besides citing the four flooded states for emergency relief the President also named South Carolina, hit by Hurricane Diane when it was still a hurricane. North Carolina had been designated earlier. The President's action makes the areas eligible for Federal financial help, but the exact amounts will await reports from Civil Defense Administrator Val Peterson.

Floods Recede Quickly

The best break the East got yesterday was from the weather. Had more rain fallen, there was no telling how much additional trouble the rivers in Pennsylvania and New England could have caused. As it was, the floods were close to the flash variety receding almost as quickly as they had come.

What is more, the damage in New England would have been worse had Hurricane Diana moved more to the north and less to the east. As it was, there was relatively little rain in Vermont and New Hampshire, meaning that rivers like the Connecticut had to take care of only the local precipitation and not the additional run-off from the north.

If the floods themselves were short-lived, their effects were due to last a long while. While a number of roads were reopened to traffic yesterday, plenty of major ones were still closed—for example, Route 20 running from Boston south toward Hartford.

The Lackawanna Railroad said it would take three weeks to restore all its services in North-

trains to Boston, not a car was moving along the Boston and Albany tracks in he Springfield area.

Grotesque stories of the flood's wrath were still pouring in. Near Scranton, Pa., three dead persons were found in second floor bedrooms of a house that broke loose from its foundations. In Winsted, Conn., a ham radio operator—the town's only contact with the outside—broke down and wept as he told what was happening.

The Naugatuck River undermined part of a cemetery in Seymour, Conn., and floated coffins downstream. In Farmington a mother and father watched three of their children whisked out of sight by the waters; they are still missing.

The ebbing of the floods meant little let-up for the rescuers in helicopters and amphibious vehicles who had worked through most of Friday. The Army Engineers moved in Bailey Bridges to close up road and rail gaps in Pennsylvania and Connecticut.

A measure of the remaining rescue job was the estimate of at least eighty persons still missing in six states.

Besides the Presidential action, at least two other quick steps were taken to meet the flood situation. Gov. Abraham A. Ribicoff of Connecticut announced that he would call a special session of the Legislature to consider relief measures. The Red Cross announced an "initial" appropriation of $2,000,000 for its emergency operations.

In a Port Jervis Yard

PORT JERVIS, N. Y., Aug. 20 (AP)—The grim saga of the flood was eased a bit by what happened in Austin Crane's back yard.

Mr. Crane lives along the bank of the Delaware River, which surged over its banks yesterday.

Inspecting his flooded yard, he saw a nine-and-a-half-pound pike, about thirty inches long. Later, when the water receded from the yard, it left quite a pool—with the fish still flapping about in it.

4,000 LEAVE CAMP DRUM

New Englanders Returning to Homes in Flood Zone

CAMP DRUM, N. Y., Aug. 20 (AP)—Eleven trains began rolling out of this northern New York camp tonight, speeding 4,000 National Guardsmen back to their homes in the flood-ravaged New England states.

The contingent of the Twenty-sixth Division had been scheduled to leave yesterday, but was held over for twenty-four hours because railroad lines were impassable in many sections of eastern New York State and western Massachusetts and Connecticut. Six thousand other men from New England left camp yesterday in motor convoys.

Today 14,100 National Guardsmen and Army Reservists from New York State began pouring into the camp for a two-week training period.

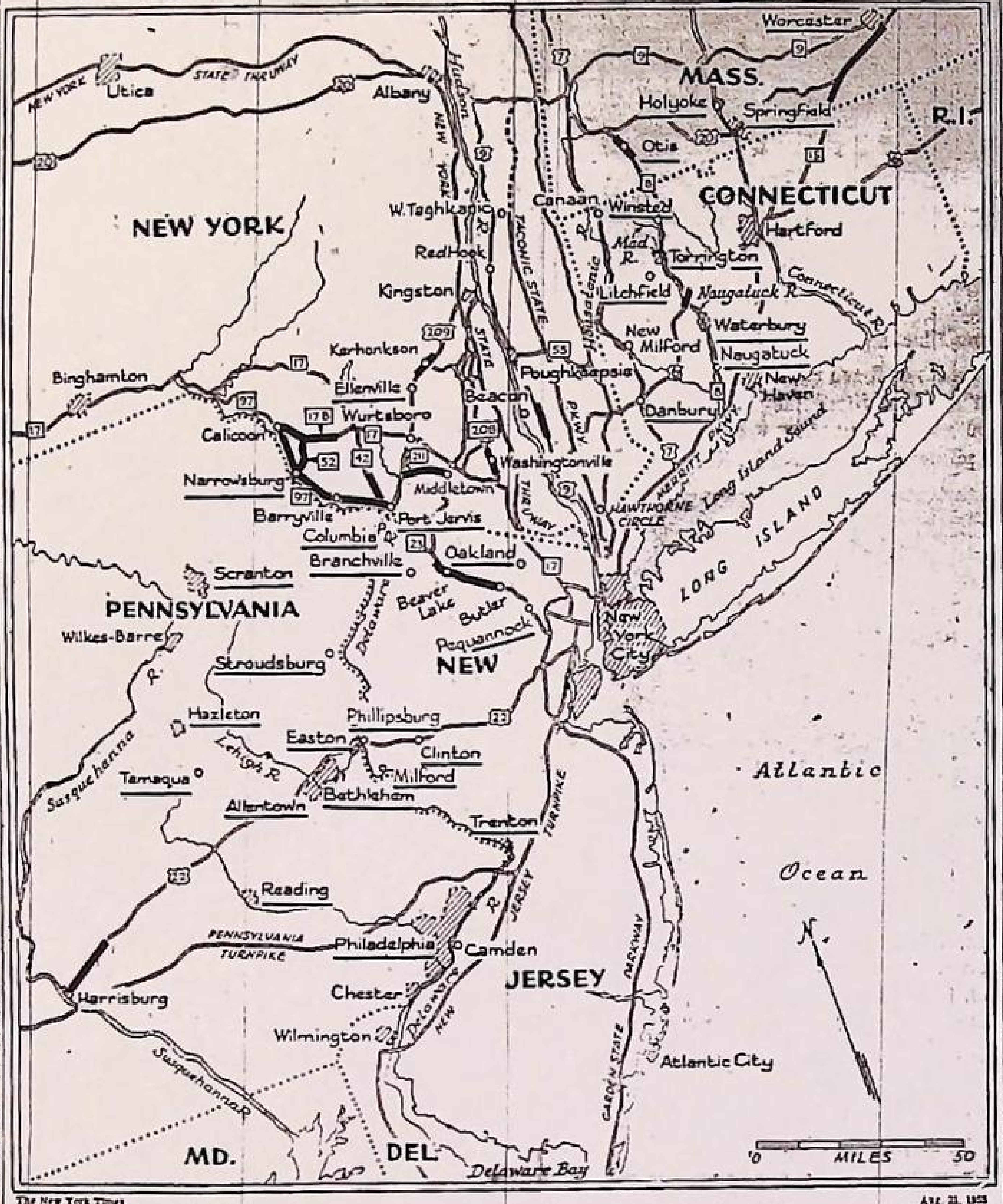
AIR HOSPITAL OFFERED

Troop Carriers From Virginia Also Ready for Flood Aid

LANGLEY AIR FORCE BASE, Va., Aug. 20 (AP)—Aid in the form of a special air transportable thirty-six-bed hospital and disaster relief airlift was offered by the Tactical Air Command to the flood-stricken northeastern states today.

The command 18th Air Force at Donaldson Air Force Base, Greenville, S. C., was asked to have its troop carrier aircraft stand by to assist the First Air Force at Mitchel Air Force Base, N. Y., in its relief efforts.

Air Force Globemasters, huge four-engine transports, are used to airlift the special hospital, which includes teams of doctors, nurses and other medical personnel.



The New York Times Aug. 21, 1955

FLOOD AFTERMATH: Underlined cities are among those stricken. Black lines indicate highways affected by rains.

Pennsylvania Toll Is 74 Dead, 80 Missing; 3,000 Homeless in Greater Philadelphia

WRECKAGE SLOWS RESCUE ATTEMPTS

Many Are Unaccounted For in Poconos—Stroudsburg Flood Worst in History

BUCKS COUNTY HARD HIT

Delaware's Crest Puts Wide Stretch Under 15 Feet of Water—Rivers Receding

Special to The New York Times.

PHILADELPHIA, Aug. 20—The known death toll from the disastrous floods in eastern Pennsylvania rose to seventy-four today.

Eighty persons were still missing and unaccounted for, mostly in the Pocono Mountain regions north of Stroudsburg. In the greater Philadelphia area more than 3,000 persons were homeless and property damage ran into millions.

Thirty persons were counted dead in East Stroudsburg, and eleven bodies were recovered from flooded areas in Canadensis, near Stroudsburg. There were other deaths in Honesdale, Hazleton and Scranton.

The bodies of three Philadelphians who had been vacationing in the Poconos were recovered today in Canadensis. The dead were Harry J. White, 43 years old; his son Joseph, 4, and James Driscoll, 6.

The floods were receding this afternoon, but rescue operations were hampered by washed-out bridges and roads, wrecked power and telephone lines.

Stroudsburg and East Stroudsburg had the worst flood in their history. More than 2,000 persons were reported homeless in Stroudsburg alone. Toby Park, an amusement center in the path of water from broken Pocono Dam, was wrecked.

One penny arcade was carried from the grounds to the middle of the road some distance away.

Stroudsburg Roads Closed

Roads leading from Stroudsburg and East Stroudsburg—Routes 209, 90, 190 and 611—were closed. The Lackawanna Railroad tracks in the area were under water. Some sections of East Stroudsburg were flooded to a depth of ten feet.

Most of the dead in Stroudsburg were from the Silk Mill Flat section, where the odor of natural gas fumes was strong. Authorities await results of autopsies to determine whether the victims were drowned or died from the fumes.

A staff of sixty-six doctors and nurses was sent to Stroudsburg from Reading to treat the homeless and injured.

The Delaware River creasted at forty feet early this morning, smashing a fifty-two-year record of twenty-eight and one-tenth

WOONSOCKET, R. I.: Sections of big mill torn away by Blackstone River after dam broke

OXBRIDGE, MASS.: Rescue workers pull Stanley Martika, right foreground, from water after auto plunged into creek

Associated Press Wirephotos

EAST STROUDSBURG, PA.: Refugees from flooded areas gather at a center set up to provide food and shelter

Massachusetts Death Toll Is 13; Food Rushed to Stricken Towns

Power and Cooking Facilities Impaired in Western Sector—Residents Warned to Boil All Water Before Using It

BOSTON, Aug. 20 (AP)—Waterlogged western Massachusetts braced itself today against the twin menace of hunger and disease as it strained to mop up the debris left by the worst flood in its history.

As murky river waters receded under a warm sun, the damage to industrial plants, homes, highways and railroad rights of way widened.

Damage was estimated at over a billion dollars. The Massachusetts Public Works Commissioner, John A. Volpe, said the cost to repair state highways alone would be about $6,500,000.

State police rushed food to stricken families in Charlton, Oxford and Southbridge. Only cold edibles were transported because cooking facilities and power were not available in several communities.

The shortage of water and the

mer seemed to be most affected by the heavy downpour and flooded streams. Observers from the air saw washed-out roads, railroad tracks buckled, automobiles abandoned and houses leaning at odd angles.

In Monson the figure of a soldier on a war memorial monument stood alone above a field of mud and silt that was the town green. The town actually was cut in two by the raging waters of the Chicopee River.

Road at Westfield

The city of Westfield remained isolated today with the exception of a single road to the south. Along this poured a stream of emergency cars and supply trucks.

The Boston and Albany Railroad out of Springfield is expected to be idle for several

ment, slowly emerged from a covering of mud and debris. One road was open to the north and south through the north end of the city. It was choked with traffic.

Mount Holyoke College in the town of South Hadley reported $125,000 damage to two organs in the Pratt Music Building. The basement of Mary E. Wooley Hall, a student recreation and cultural center, was flooded.

Except in communities where it was necessary to boil water for drinking, no immediate danger of food shortages was apparent. There was a possibility that milk might be in short supply, since most of it for this area comes from Vermont and wide detours are in order.

Tourists on Way Again

As today developed hot and humid, thousands of tourists who had been holed up in motels, hotels and tourist homes since Thursday hopefully took to the road. Some were continuing north to continue vacations. Others were headed to the south and west to return to their jobs.

Many businesses were running short-handed in the isolated cities and towns because of the inability of workers to commute from outlying areas.

The narrow back roads, cus-

FLOOD TOLL RISES AS RIVERS RECEDE

Continued From Page 1

were dead and several were missing. Most seriously battered were Springfield, Chicopee, Holyoke and Worcester, but the danger from flooded rivers seemed to have passed. Emergency kitchens were set up to

Mountains. Without water, power or gas were Stroudsburg, Scranton, Easton, Hazleton, Tamaqua, Reading, Wilkes-Barre and Pottstown.

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VIRGINIA: Three were known to be dead, but the worst appeared to be over. Damage was estimated at three to four million dollars in scattered areas

Flood Drops Big Fish In a Port Jervis Yard

PORT JERVIS, N. Y., Aug. 20 (AP)—The grim saga of the flood was eased a bit by what happened in Austin Crane's back yard.

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eastern Pennsylvania. While the New Haven was running its trains to Boston, not a car was moving along the Boston and Albany tracks in he tSpringfield area.

Grotesque stories of the flood's wrath were still pouring in. Near Scranton, Pa., three dead persons were found in second floor bedrooms of a house that broke loose from its foundations. In Winsted, Conn., a ham radio operator—the town's only contact with the outside—broke

NEWSPAPER: THE NEW YORK TIMES
LOCATION: NEW YORK, NEW YORK
DATE: 21 AUGUST 1955
VOLUME CIV, NUMBER 35,638
PAGE 1, COLUMN 5-8; PAGE 47, COLUMN 1-8

"All the News
That's Fit to Print"

The New York Times.

LATE CITY EDITION
Mostly fair and hot today and tomorrow.
Temperature Range Today-Max., 95; Min., 76
Temperature Yesterday-Max., 94.8; Min., 74.5
Full U. S. Weather Bureau Report, Sec. 5, Page 11

UMMARY AND INDEX, PAGE 95

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NEW YORK, SUNDAY, AUGUST 21, 1955.
Including Magazine and Book Review
SECTION ONE
TWENTY-FIVE CENTS

I SAY 300 UTBREAKS TH AFRICA

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RY GINIGER
a New York Times.

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o the official ac- rorists struck in ent centers around t noon bombs were lice headquarters were killed and ounded in French Constantine. The those of a police nephew of the

Page 2, Column 4

ports News

EBALL

Soviet to Free 3 Americans; 2 Are G.I.'s Missing 7 Years

U. S. Requested Release of Privates After Former Captives From Other Lands Told of Soldiers' Imprisonment

Special to The New York Times.

WASHINGTON, Aug. 20—Three Americans, including two United States soldiers missing for seven years, are being released from Soviet prisons.

The State Department announced today that the Soviet Foreign Office had informed the United States Embassy in Moscow of the imminent release of the three men.

They are Wilfred C. Cumish, United States Army private, missing from his post in Vienna, more than seven years; Murray Fields, United States Army private, missing from his unit in Germany more than seven years, and Frederick Charles Hopkins, about whom nothing is known.

Cumish, 39, is a native of Amesbury, Mass. Fields, 36, also known as Feingersch, is a native of Brooklyn, N. Y.

The Army said both Fields and Cumish were classed on its records as deserters. It said they would be subject to arrest and trial upon their return to American custody. According to the Army, they were absent without leave from their organizations when they disappeared behind the Iron Curtain in 1948.

The release of Cumish and Fields had been requested by the United States Embassy in Moscow July 16, shortly after the fact that they were in Soviet prisons had become known.

Information on the presence of the two had been obtained from nationals of other countries who had themselves been released from Soviet prisons. Yesterday, the Soviet Foreign Office advised the United States that the men would be freed and added the unexpected information that

Continued on Page 21, Column 2

Reds Returning One Flier; Other Died in Korea Plane

By The United Press.

PANMUNJOM, Korea, Sunday, Aug. 21—The North Korean Communists admitted today holding a United States Air Force lieutenant who was shot down by Red guns over the Korean demilitarized zone. The Communists said a second United States officer in the downed plane was dead.

At a meeting of the Joint Military Armistice Commission the Reds said they captured Second Lieutenant Guy H. Bumpass Jr. of Jackson, Miss., the pilot of the T-6 training plane shot down Wednesday.

The Communists said that Capt. Charles W. Brown of West Louisville, Ky., Army observer in the trainer, was killed in the crash of the plane, downed by Red anti-aircraft fire.

Maj. Gen. Jung Kooh Rok of North Korea told Maj. Gen. Harlan C. Parks, senior United Nation delegate on the commission that Lieutenant Bumpass would be returned to the United Nations Command on Tuesday within the demilitarized zone.

Body to Be Brought Back

General Jung said that Captain Brown's body would be turned over to the United Nations Command at the same time.

General Parks said that the United Nations Command was not certain the captain died in the crash or from anti-aircraft fire.

"When the body is returned," he said after the meeting, "we will examine it to determine whether he was killed in the crash or by artillery fire."

General Parks protested bitterly to the Communists for their "unprovoked and murderous" attack on the unarmed plane.

He told the Reds that just one day after the United States plane was shot down, a Communist plane was spotted over United Nations territory within the range of United Nations anti-aircraft batteries.

"But despite a strong resentment," he said, "we did not fire on it."

The Communist agreement to

Continued on Page 4, Column 4

SOVIET DISCLOSES SECRET FARM DATA

Grain Harvest Seen Falling Far Short of Goal—U. S. Experts Offer Ideas

By WELLES HANGEN
Special to The New York Times.

MOSCOW, Aug. 20—The Soviet Union's grain harvest this year will fall considerably short of the reduced goal of 114,000,000 metric tons set by the Government.

The first official disclosure of this country's failure to fulfill the vital grain production plan was made here today by Ivan A. Benediktov, Minister of State Farms, during a conference with the United States agricultural delegation.

The two-and-one-half-hour session between the twelve American visitors and leading Soviet agriculture officials was unusual. Mr. Benediktov and his colleagues divulged quantities of statistical information on crop acreages, farm labor and related subjects that had been held in the closest secrecy throughout the history of the Soviet regime.

Moreover, Soviet officials accepted in good grace and without serious objection a series of suggestions for changes in this country's farm program offered by the Americans. The visitors yesterday completed a month-long tour of the principal Soviet agricultural regions.

Criticism by Americans

The United States experts formulated the following criticisms of the Soviet agricultural system:

¶Farm labor is expended with extravagance while materials, machinery and other production facilities are similarly wasted on many collective and state farms.

¶The intensive program to expand corn production is being pursued even in areas of deficient rainfall where sorghums or legumes could be more eco-

SECRECY IS EASED AS ATOMIC PARLEY IN GENEVA CLOSES

Nations Expected to Share Knowledge of Peaceful Uses of Nuclear Energy

By WILLIAM L. LAURENCE
Special to The New York Times.

GENEVA, Aug. 20—The first International Conference on the Peaceful Uses of Atomic Energy came to a close here this afternoon after a fortnight of historic sessions. During them the United States, the Soviet Union, Britain, France and other nations shared hitherto closely guarded secrets of how to harness the vast energy of the atom for the benefit of mankind.

The conference marked the end of an era of secrecy on matters relating to knowledge about controlled uses of atomic energy for power and for improving the health, wealth and happiness of mankind everywhere. From now on it is expected that the nations will share their knowledge freely about the peaceful uses of atomic energy, reserving to themselves only those items that relate to military use.

While no formal mention was made during the two weeks of sessions about the prospects for international control of atomic weapons delegates from seventy-two countries in private conversations were generally agreed that the new spirit of international cooperation that marked the conference throughout would also serve as an opening wedge for removing obstacles still standing in the way of reaching an agreement on such controls.

Knowledge-Sharing Stressed

Cooperation among the scientists, delegates said, will remove political barriers. The sharing of knowledge, they are convinced, will demonstrate to the leaders of all nations that a nuclear reactor that promises to bring power and wealth in abundance to all peoples is a weapon vastly more powerful than any hydrogen bomb—a weapon that will make the hydrogen bomb and war itself anachronisms.

The conference ended with the reading by its president, Prof. Homi J. Bhabha of India, of a message from Soviet Premier Nikolai A. Bulganin that caused tumultuous applause. The message read:

"The International Conference on Peaceful Uses of Atomic Energy now drawing to a close in Geneva is a significant step toward the establishment of international cooperation in the most important field of the utilization of atomic energy for peaceful purposes.

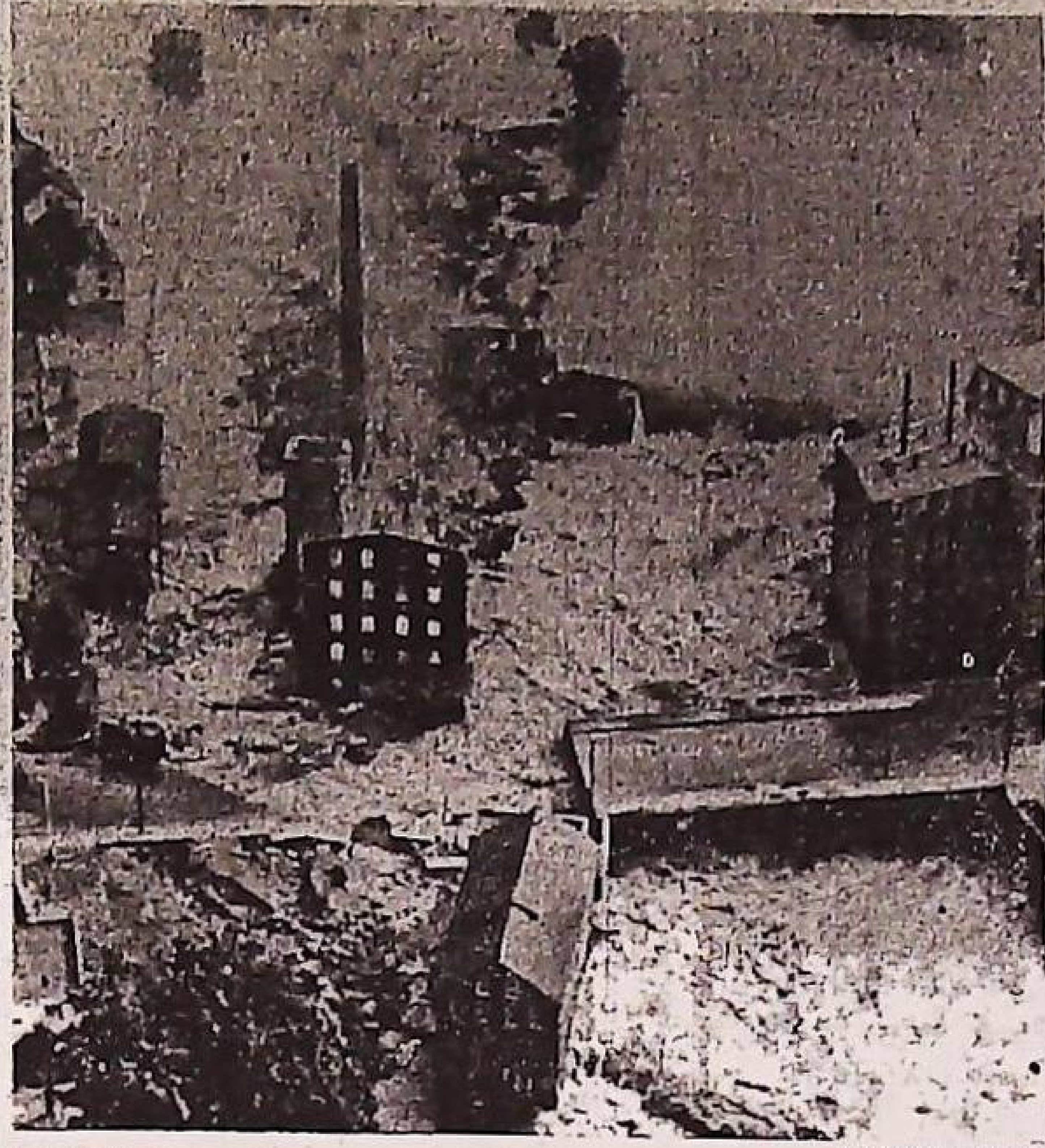
"The exchange of views and information which has taken place at the conference represents a valuable contribution to further scientific and technical progress in this field.

"This conference will undoubtedly serve the cause of peace and make for a further relaxation of international tension.

"The Soviet Government congratulates all those taking part in the conference on the success achieved and expresses hope that the international cooperation in the field of peaceful utilization of atomic energy which has been so successfully inaugurated at this conference will be continued through the regular convening of

Continued on Page 34, Column 1

FLOOD TOLL IS 143 AS RIVERS RECEDE; 31 LOST AT CAMP IN THE POCONOS; PRESIDENT SPEEDS DISASTER RELIEF



Associated Press Wirephoto

CONNECTICUT PLANT BURNS IN FLOOD: Smoke rises from the Metal Sellers Corporation in Putnam after two-day fire. Hundreds of barrels of exploding magnesium from the plant floated about the business district on flood waters, setting other fires. Rising river washed out the roadway in front of plant, preventing firemen from reaching blaze.

JERSEY DECLARED A DISASTER ZONE

Meyner Describes Conditions in the West as Appalling—5 Dead, 3,000 Homeless

By GEORGE CABLE WRIGHT
Special to The New York Times

TRENTON, Aug. 20—President Eisenhower today declared New Jersey a disaster area. This promise of Federal aid followed a plea for assistance by Gov. Robert B. Meyner and Representative Frank Thompson Jr.

Later the Governor made a three-hour inspection flight. He called conditions in western New Jersey appalling.

The death toll in the state is five. More than 3,000 persons have fled their homes. Property damage is expected to reach hundreds of millions of dollars.

The deluge, which began yesterday when the Delaware River and her tributaries burst over their banks, had by this afternoon inundated much of the Delaware Valley.

Four Delaware River bridges were destroyed. Three others were damaged and are in danger of collapse. Many small bridges and roads are badly damaged or washed out.

The Delaware crested at twen-

Continued on Page 48, Column 1

Connecticut Waters Fall; Havoc Shocks Army Aide

By MERRILL FOLSOM
Special to The New York Times

HARTFORD, Aug. 20—Waters receded and the sun shone today to bare Connecticut's deep gashes from yesterday's record floods. Secretary of the Army Wilber M. Brucker arrived by plane and flew over the stricken areas by helicopter. He declared the disaster was so great he was making immediate assignments of engineers and funds to restore transportation and public health.

Alighting from the helicopter he telephoned to President Eisenhower in Colorado. Within an hour, the President sent the following wire to Gov. Abraham A. Ribicoff:

"As you requested, I have today declared a 'major disaster,' under public authority of Public Law 875, in the areas of the State of Connecticut which have been damaged by floods.

"I have allotted to the Federal Civil Defense Administration such funds for Federal assistance as are necessary to supplement state and other efforts.

"I am deeply concerned with the hardship and suffering caused the people of your state by this flood."

Eighty thousand persons were driven from their homes by the swollen rivers. Most of them

Continued on Page 46, Column 3

DEATH TOLL HIGH IN POCONOS CAMP

Several From New York and Jersey Are Still Missing—Stroudsburg Toll Large

Special to The New York Times.

EAST STROUDSBURG, Pa., Aug. 20—Chaos and benumbed shock overlie this area today, in the wake of the worst flood in its history.

There are thirty bodies in one funeral home alone, and no one knows how much higher the figure will go. Some estimates are at least 100. Helicopter pilots this afternoon reported seeing at least nine bodies floating in the still wildly overflowing Delaware River.

The greatest concentrated tragedy was at Camp Davis, the summer colony of fourteen modest bungalows near Analomink three miles northwest of here. More than forty persons, most of them women and children from New York and New Jersey were vacationing at the camp.

The toll at Camp Davis was twelve persons known dead and

6 STATES DIG OUT

Thousands Housed by Red Cross—3 Cities in Rhode Island Hit

By EDWIN L. DALE JR.

A six-state area in the northeastern United States counted 143 deaths yesterday, with the full measure of damage from Friday's floods still to be assessed.

Besides the known dead scores were reported missing. The final toll was far from complete.

The Red Cross, set aside $2,000,000 for preliminary relief and reported it had cared for 9,000 homeless Friday night. This figure did not approach half of all those who were flooded out of their homes.

In Fraser, Colo., President Eisenhower moved to make Federal aid immediately available to six stricken states. He declared Pennsylvania, Connecticut, Massachusetts, South Carolina and "all flooded areas" of New Jersey and the Woonsocket, R. I., zone major disaster areas.

Rhode Island became a late addition to the distress list as the Blackstone joined the rivers on the loose. Gov. Dennis J. Roberts estimated damage at $150,000,000 in Woonsocket, Central Falls and Pawtucket.

The day's most agonizing news came from the Poconos in Pennsylvania, where thirty-one persons apparently lost their lives as the flood burst upon their summer camp.

However, in the six-state area generally, a combination yesterday of dry skies, dikes and sandbags kept new flood destruction to a minimum. Rivers all over the Northeast—including the Blackstone—were falling back from their flood peaks.

Disease Threat Remains

Disease remained a serious menace in parts of Connecticut and Pennsylvania, and pure water was a problem in several dozen soggy communities.

A state-by-state summary of flood conditions follows:

CONNECTICUT: Forty-three dead. Thirteen communities declared "health hazard areas," endangered by polluted water and contaminated food. Damages greatest in the Naugatuck River Valley. Litchfield, Torrington, Waterbury, Winsted, Ansonia, Seymour, Naugatuck and Putnam were hardest hit. Winsted, with a population of 9,000 was virtually isolated. National Guard troops were flown in to keep order.

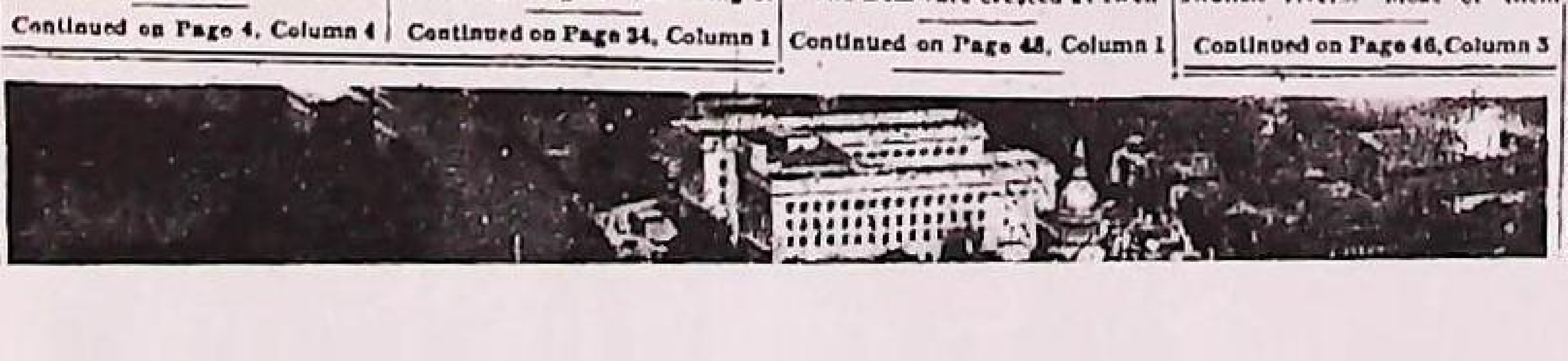
NEW JERSEY: Five dead. Gov. Robert B. Meyner said the state had suffered a "catastrophe" and was promised Federal aid. High water forced 1,000 persons to flee their homes in Trenton.

NEW YORK: Four were known to be dead. Governor Harriman declared Port Jervis and its environs a disaster area, but said no state money was available for relief. Receding rivers left damage estimated in the millions in six counties in the southeastern part of the state.

MASSACHUSETTS: Thirteen

Continued on Page 47, Column 3

City's Heat at 94.8°



to a depth of ten feet.

Most of the dead in Stroudsburg were from the Silk Mill Flat section, where the odor of natural gas fumes was strong. Authorities await results of autopsies to determine whether the victims were drowned or died from the fumes.

A staff of sixty-six doctors and nurses was sent to Stroudsburg from Reading to treat the homeless and injured.

The Delaware River creasted at forty feet early this morning, smashing a fifty-two-year record of twenty-eight and one-tenth feet. It was sixteen feet above flood level. Part of a Northampton Street bridge there was washed away. All electric lights were cut in the central business section of Easton.

Five persons were listed as dead and one missing in Scranton, where Mayor James T. Hanlon closed all business establishments and public places because of fire hazard. Many residents were without drinking water.

In Bethlehem, the Bethlehem Steel Company plant was shut down by floods in its buildings.

All major roads were closed in Tamaqua. Five bridges there were out of service for varying periods.

Bucks County Is Hard Hit

In the greater Philadelphia area most of the homeless were in Bucks County, north of the city, where the Delaware River and the usually calm Neshaminy Creek went on rampages.

Fifty miles of Bucks County waterfront along the Delaware from Upper Black Eddy to Bristol were under fifteen feet of water at the flood crest last night and early today.

Many families also were homeless along the Neshaminy. Bucks County Civil Defense Director J. R. Fell said that the flood crest was reached throughout most of the stricken area early today.

The Delaware River was receding today, leaving masses of debris along its banks and lowlands. The Schuylkill River, which also overflowed, began settling back to normal, too.

All along the Delaware River, churches, school buildings and fire houses were opened to refugees, and the Red Cross set up emergency stations, field kitchens and distribution centers for blankets and other disaster necessities.

A thousand persons were evacuated from 300 homes in a low-lying five-mile section along West State Street and Sanican Drive in West Trenton and Ewing Township. In Phillipsburg, N. J., across the Delaware from Easton, Pa., 200 were evacuated as water rushed into the plaza near the Easton Bridge.

PHONE CALLS DELAYED

Company Reports Faulty Links With Flooded Areas

The New York Telephone Company reported yesterday that it was having trouble putting through calls to flooded areas in Connecticut, Massachusetts, New Jersey and Pennsylvania.

The company said it was making all efforts to expedite communication and that "alternative routes have been established wherever possible."

"Conditions at many of the distressed points," it added, "are still so critical that it cannot be determined at this time when the situation will measurably improve."

widened.

Damage was estimated at over a billion dollars. The Massachusetts Public Works Commissioner, John A. Volpe, said the cost to repair state highways alone would be about $6,500,000.

State police rushed food to stricken families in Charlton, Oxford and Southbridge. Only cold edibles were transported because cooking facilities and power were not available in several communities.

The shortage of water and the danger of pollution brought a warning to flood-ravaged towns to boil all drinking water before using it.

Death Toll Is 13

The death toll stood at thirteen but many persons were missing or unaccounted for.

In Charlton several automobiles were under water and rescuers had not been able to reach them to determine if they held passengers.

Railroads resumed service on some lines. But there were no trains running out of Springfield. A newsman who flew over the western sector reported seeing tracks buckled and ties splintered.

The main highway from Boston to New York—Route 20—was impassable. It appeared that it would be days before it could be opened to traffic.

In Southbridge, near the Rhode Island line, a three-family house floated on its side like a doll house in a tub. The American Optical Company there reported its loss would reach $10,000,000.

Eleven thousand families were without water in Worcester's north end because of [illegible] in the high pressure system. A state of emergency was in force in the city and all counties to the west.

The Army is supplying water purification tablets in stricken areas. C rations, blankets and mattresses were shipped to Southbridge and Auburn.

Boston Health Commissioner John H. Cauley said the loss of food because of power failures in refrigeration units was severe.

About 45,000 telephones were out in Massachusetts and Rhode Island, most of them in western Massachusetts.

River Water Subsides

Special to The New York Times

SPRINGFIELD, Mass., Aug. 20—The waters of the Connecticut River and its tributaries gradually subsided in western Massachusetts today. Under a blazing sun weary workers toiled to remove the traces of $25,000,000 damage caused by two days of relentless rain.

With two persons known dead and possibly a few bodies yet to be found, the stricken area counted scores of bridges washed away, gaping holes in main highways and whole neighborhoods flooded or digging out of clinging silt.

The danger of even more disastrous flooding abated as the Connecticut grudingly receded toward its normal channels. The rains induced by Hurricane Diane failed to spread much farther north than Northampton and Hadley, Mass., and robbed the river of added power upstream once the downpour ended late yesterday afternoon.

The river crested at Springfield at 7:00 P. M. yesterday at a height of 21.1 feet. The waters thereafter began to recede at the rate of about six inches an hour. By noon today the crest was 15/15 feet.

The towns of Monson and Palmer ... of mud and silt that was the town green. The town actually was cut in two by the raging waters of the Chicopee River.

Road at Westfield

The city of Westfield remained isolated today with the exception of a single road to the south. Along this poured a stream of emergency cars and supply trucks.

The Boston and Albany Railroad out of Springfield is expected to be idle for several more days because of washouts. The New York, New Haven and Hartford Railroad began operating a shuttle service to New York. Buses, using the lone route south left open, took passengers to Berlin, Conn., where they were able to board trains.

The city of Holyoke, using snow plows and every other available piece of highway equip-

As today developed hot and humid, thousands of tourists who had been holed up in motels, hotels and tourist homes since Thursday hopefully took to the road. Some were continuing north to continue vacations. Others were headed to the south and west to return to their jobs.

Many businesses were running short-handed in the isolated cities and towns because of the inability of workers to commute from outlying areas.

The narrow back roads, customarily known only to local residents, were lined with crawling vehicles using such byways for detours.

At the various state police barracks in the flood areas crude signs gave tourists directions for making detours. At hamlets of the back roads local police and civil defense workers were posted at intersections to give directions and to keep traffic moving.

AS RIVERS RECEDE

Continued From Page 1

were dead and several were missing. Most seriously battered were Springfield, Chicopee, Holyoke and Worcester, but the danger from flooded rivers seemed to have passed. Emergency kitchens were set up to feed thousands of homeless and 11,000 families in Worcester had no drinking water.

PENNSYLVANIA: The known dead totaled seventy-four and eighty persons were missing. Gov. George M. Leader said rehabilitation and reconstruction would be a "major problem for months to come." The heaviest death and destruction toll was in the area of Stroudsburg in the Pocono ... ton, Easton, Hazleton, Tamaqua, Reading, Wilkes-Barre and Pottstown.

RHODE ISLAND: One person was dead. The Blackstone River flooded Woonsocket and 500 families were evacuated. Almost the entire city, with a population of 50,000, was without drinking water.

VIRGINIA: Three were known to be dead, but the worst appeared to be over. Damage was estimated at three to four million dollars in scattered areas.

The best news yesterday came from Hartford and Philadelphia: The Connecticut, Delaware and Schuylkill Rivers would do no more damage. The Connecticut swept past Hartford at levels that once would have brought major devastation, but the city went untouched because of dikes built after the 1936 floods.

The Delaware pushed some water into low areas of Trenton and Burlington, N. J., but carried no serious threat to Philadelphia and Camden farther downstream.

New devastation was wrought at Pellet's Island, near Middletown, N. Y., last night when the Wallkill River forced the evacuation of about seventy-five persons in the Celery Avenue section. The river had risen at the rate of seven inches an hour all afternoon.

Perhaps the most unwelcome additions to the news were the reports from communities that had suffered heavily but could not even get the word out on Friday.

For example, there was the town of Putnam in northeastern Connecticut. While attention was concentrated in the western part of the state, Putnam not only was flooded by the Quinebaug and French Rivers but also was burned and blasted by exploding magnesium. A magnesium plant there went up in flames and explosions lasted throughout the night.

In Fraser the President was in touch during the day with Secretary of the Army Wilber M. Brucker and acting Secretary of Defense Ruben R. Robertson. The armed services had already gone into action before the President's order.

Besides citing the four flooded states for emergency relief the President also named South Carolina, hit by Hurricane Diane when it was still a hurricane. North Carolina had been designated earlier. The President's action makes the areas eligible for Federal financial help, but the exact amounts will await reports from Civil Defense Administrator Val Peterson.

Floods Recede Quickly

The best break the East got yesterday was from the weather. Had more rain fallen, there was no telling how much additional trouble the rivers in Pennsylvania and New England could have caused. As it was, the floods were close to the flash variety receding almost as quickly as they had come.

What is more, the damage in New England would have been worse had Hurricane Diana moved more to the north and less to the east. As it was, there was relatively little rain in Vermont and New Hampshire, meaning that rivers like the Connecticut had to take care of only the local precipitation and not the additional run-off from the north.

If the floods themselves were short-lived, their effects were due to last a long while. While a number of roads were reopened to traffic yesterday, plenty of major ones were still closed—for example, Route 20 running from Boston south toward Hartford.

The Lackawanna Railroad said it would take three weeks to restore all its services in North- trains to Boston, not a car was moving along the Boston and Albany tracks in he Springfield area.

Grotesque stories of the flood's wrath were still pouring in. Near Scranton, Pa., three dead persons were found in second floor bedrooms of a house that broke loose from its foundations. In Winsted, Conn., a ham radio operator—the town's only contact with the outside—broke down and wept as he told what was happening.

The Naugatuck River undermined part of a cemetery in Seymour, Conn., and floated coffins downstream. In Farmington a mother and father watched three of their children whisked out of sight by the waters; they are still missing.

The ebbing of the floods meant little let-up for the rescuers in helicopters and amphibious vehicles who had worked through most of Friday. The Army Engineers moved in Bailey Bridges to close up road and rail gaps in Pennsylvania and Connecticut.

A measure of the remaining rescue job was the estimate of at least eighty persons still missing in six states.

Besides the Presidential action, at least two other quick steps were taken to meet the flood situation. Gov. Abraham A. Ribicoff of Connecticut announced that he would call a special session of the Legislature to consider relief measures. The Red Cross announced an "initial" appropriation of $2,000,000 for its emergency operations.

In a Port Jervis Yard

PORT JERVIS, N. Y., Aug. 20 (AP)—The grim saga of the flood was eased a bit by what happened in Austin Crane's back yard.

Mr. Crane lives along the bank of the Delaware River, which surged over its banks yesterday.

Inspecting his flooded yard, he saw a nine-and-a-half-pound pike, about thirty inches long. Later, when the water receded from the yard, it left quite a pool—with the fish still flapping about in it.

4,000 LEAVE CAMP DRUM

New Englanders Returning to Homes in Flood Zone

CAMP DRUM, N. Y., Aug. 20 (AP)—Eleven trains began rolling out of this northern New York camp tonight, speeding 4,000 National Guardsmen back to their homes in the flood-ravaged New England states.

The contingent of the Twenty-sixth Division had been scheduled to leave yesterday, but was held over for twenty-four hours because railroad lines were impassable in many sections of eastern New York State and western Massachusetts and Connecticut. Six thousand other men from New England left camp yesterday in motor convoys.

Today 14,100 National Guardsmen and Army Reservists from New York State began pouring into the camp for a two-week training period.

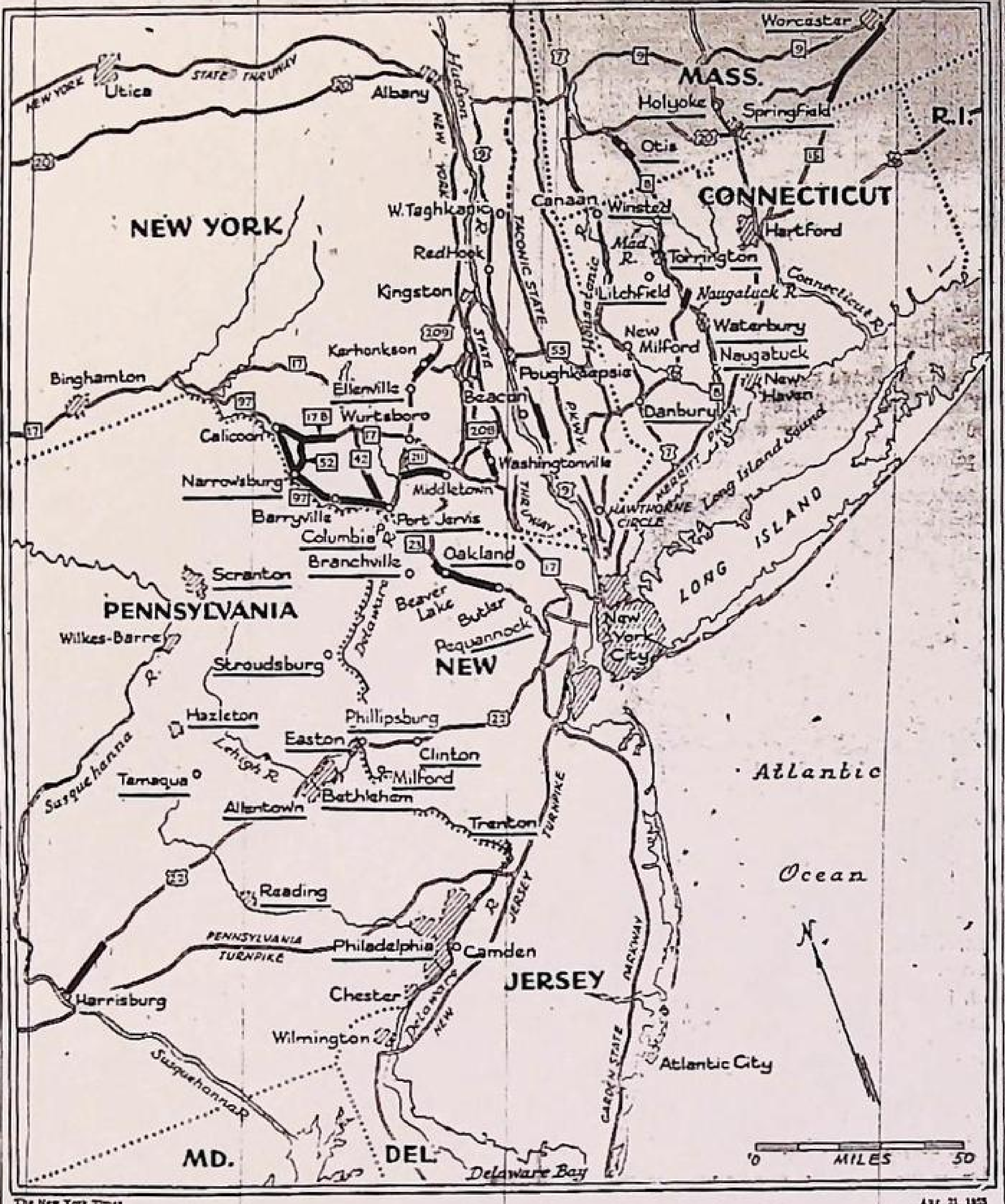
AIR HOSPITAL OFFERED

Troop Carriers From Virginia Also Ready for Flood Aid

LANGLEY AIR FORCE BASE, Va., Aug. 20 (AP)—Aid in the form of a special air transportable thirty-six-bed hospital and disaster relief airlift was offered by the Tactical Air Command to the flood-stricken northeastern states today.

The command 18th Air Force at Donaldson Air Force Base, Greenville, S. C., was asked to have its troop carrier aircraft stand by to assist the First Air Force at Mitchel Air Force Base, N. Y., in its relief efforts.

Air Force Globemasters, huge four-engine transports, are used to airlift the special hospital, which includes teams of doctors, nurses and other medical personnel.



The New York Times Aug. 21, 1955

FLOOD AFTERMATH: Underlined cities are among those stricken. Black lines indicate highways affected by rains.

Pennsylvania Toll Is 74 Dead, 80 Missing; 3,000 Homeless in Greater Philadelphia

WRECKAGE SLOWS RESCUE ATTEMPTS

Many Are Unaccounted For in Poconos—Stroudsburg Flood Worst in History

BUCKS COUNTY HARD HIT

Delaware's Crest Puts Wide Stretch Under 15 Feet of Water—Rivers Receding

Special to The New York Times.

PHILADELPHIA, Aug. 20—The known death toll from the disastrous floods in eastern Pennsylvania rose to seventy-four today.

Eighty persons were still missing and unaccounted for, mostly in the Pocono Mountain regions north of Stroudsburg. In the greater Philadelphia area more than 3,000 persons were homeless and property damage ran into millions.

Thirty persons were counted dead in East Stroudsburg, and eleven bodies were recovered from flooded areas in Canadensis, near Stroudsburg. There were other deaths in Honesdale, Hazletton and Scranton.

The bodies of three Philadelphians who had been vacationing in the Poconos were recovered today in Canadensis. The dead were Harry J. White, 43 years old; his son Joseph, 4, and James Driscoll, 6.

The floods were receding this afternoon, but rescue operations were hampered by washed-out bridges and roads, wrecked power and telephone lines.

Stroudsburg and East Stroudsburg had the worst flood in their history. More than 2,000 persons were reported homeless in Stroudsburg alone. Toby Park, an amusement center in the path of water from broken Pocono Dam, was wrecked.

One penny arcade was carried from the grounds to the middle of the road some distance away.

Stroudsburg Roads Closed

Roads leading from Stroudsburg and East Stroudsburg—Routes 209, 90, 190 and 611—were closed. The Lackawanna Railroad tracks in the area were under water. Some sections of East Stroudsburg were flooded to a depth of ten feet.

Most of the dead in Stroudsburg were from the Silk Mill Flat section, where the odor of natural gas fumes was strong. Authorities await results of autopsies to determine whether the victims were drowned or died from the fumes.

A staff of sixty-six doctors and nurses was sent to Stroudsburg from Reading to treat the homeless and injured.

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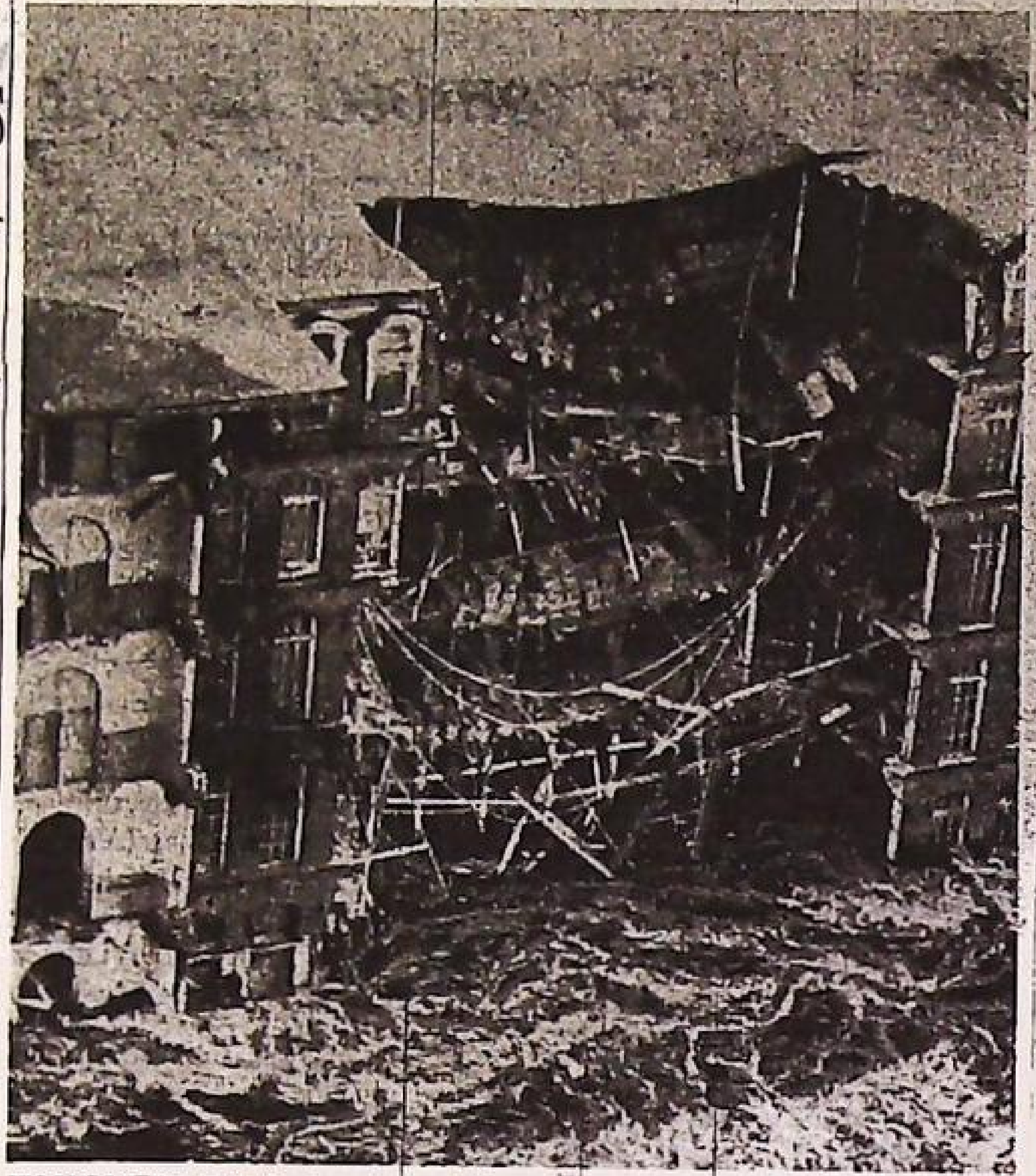

WOONSOCKET, R. I.: Sections of big mill torn away by Blackstone River after dam broke

OXBRIDGE, MASS.: Rescue workers pull Stanley Martika, right foreground, from water after auto plunged into creek

Associated Press Wirephotos

EAST STROUDSBURG, PA.: Refugees from flooded areas gather at a center set up to provide food and shelter

Massachusetts Death Toll Is 13; Food Rushed to Stricken Towns

Power and Cooking Facilities Impaired in Western Sector—Residents Warned to Boil All Water Before Using It

BOSTON, Aug. 20 (AP)—Water-logged western Massachusetts braced itself today against the twin menace of hunger and disease as it strained to mop up the debris left by the worst flood in its history.

As murky river waters receded under a warm sun, the damage to industrial plants, homes, highways and railroad rights of way widened.

Damage was estimated at over a billion dollars. The Massachusetts Public Works Commissioner, John A. Volpe, said the cost to repair state highways alone would be about $6,500,000.

State police rushed food to stricken families in Charlton, Oxford and Southbridge. Only cold edibles were transported because cooking facilities and power were not available in several communities.

The shortage of water and the

mer seemed to be most affected by the heavy downpour and flooded streams. Observers from the air saw washed-out roads, railroad tracks buckled, automobiles abandoned and houses leaning at odd angles.

In Monson the figure of a soldier on a war memorial monument stood alone above a field of mud and silt that was the town green. The town actually was cut in two by the raging waters of the Chicopee River.

Road at Westfield

The city of Westfield remained isolated today with the exception of a single road to the south. Along this poured a stream of emergency cars and supply trucks.

The Boston and Albany Railroad out of Springfield is expected to be idle for several

ment, slowly emerged from a covering of mud and debris. One road was open to the north and south through the north end of the city. It was choked with traffic.

Mount Holyoke College in the town of South Hadley reported $125,000 damage to two organs in the Pratt Music Building. The basement of Mary E. Wooley Hall, a student recreation and cultural center, was flooded.

Except in communities where it was necessary to boil water for drinking, no immediate danger of food shortages was apparent. There was a possibility that milk might be in short supply, since most of it for this area comes from Vermont and wide detours are in order.

Tourists on Way Again

As today developed hot and humid, thousands of tourists who had been holed up in motels, hotels and tourist homes since Thursday hopefully took to the road. Some were continuing north to continue vacations. Others were headed to the south and west to return to their jobs.

Many businesses were running short-handed in the isolated cities and towns because of the inability of workers to commute from outlying areas.

The narrow back roads, cus-

FLOOD TOLL RISES AS RIVERS RECEDE

Continued From Page 1

were dead and several were missing. Most seriously battered were Springfield, Chicopee, Holyoke and Worcester, but the danger from flooded rivers seemed to have passed. Emergency kitchens were set up to

Mountains. Without water, power or gas were Stroudsburg, Scranton, Easton, Hazleton, Tamaqua, Reading, Wilkes-Barre and Pottstown.

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VIRGINIA: Three were known to be dead, but the worst appeared to be over. Damage was estimated at three to four million dollars in scattered areas

Flood Drops Big Fish In a Port Jervis Yard

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THE ENCYCLOPEDIA OF SCIENCE FICTION
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CONTRIBUTING EDITOR BRIAN STABLEFORD
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the crews who man giant kites to guard the frontiers against demons.

As an illustrator, KR did much to change the appearance of UK sf magazines, notably *Science Fantasy*, for which he designed all but 7 of the covers from Jan 1965 until its demise (as *SF Impulse*) in Feb 1967, and also NEW WORLDS for a period in 1966. His boldly Expressionist covers, line-oriented, paralleled the shift in content of these magazines away from GENRE SF and FANTASY towards a more free-form, speculative kind of fiction. He later did covers and interior illustrations for the book editions of *New Worlds Quarterly* ed Michael MOORCOCK, for some of whose novels he has also designed covers. He has illustrated several of his own 1980s titles. [JC]

Other works: *A Heron Caught in Weeds* (coll **1987** chap); *The Natural History of the P.H.* (**1988** chap), nonfiction, the initials referring to the "Primitive Heroine" who appears throughout KR's work; *The Road to Paradise* (dated 1988 but **1989**), associational; *Irish Encounters* (dated 1988 but **1989** chap).

See also: ANDROIDS; BRITISH SCIENCE FICTION AWARD; CYBERNETICS; ESP; HIVE-MINDS; INTERZONE; NEW WRITINGS IN SF; RELIGION; SOCIOLOGY; SUPERNATURAL CREATURES.

ROBERTS, LIONEL ◊ R.L. FANTHORPE.

ROBERTS, MICHELE (BRIGITTE) (1949-) UK poet and novelist, poetry editor of *Spare Rib* 1975-7. Her novels all tend to FABULATION in their expression of an articulate FEMINIST aesthetic, but 2 are of genre interest: *The Wild Girl* (**1984**) vigorously displaces the reminiscences of Mary Magdalene, and *The Book of Mrs Noah* (**1987**) similarly engages its heroine in myth-rich concourse with the female icons which engender the stories that make the world (◊ MYTHOLOGY). [JC]

ROBERTS, TERENCE Pseudonym of Ivan Terence Sanderson (1911-1973), UK-born US writer and illustrator on the natural sciences, as in *Living Treasure* (**1941**), about wildlife around the Caribbean. As TR his sf novel was *Report on the Status Quo* (**1955**), a DISASTER story set in 1958-9, when the world is seen to reel under great floods and WWIII. As Ivan T. Sanderson he wrote several books with a relevance to PSEUDO-SCIENCE, including *Abominable Snowmen* (**1961**; cut 1968) on cryptozoology, *Uninvited Visitors: A Biologist Looks at UFOs* (**1967**) and *Invisible Residents* (**1970**) about UFOS and related Fortean matter (◊ Charles FORT), *Things* (**1967**) and *More "Things"* (**1969**) about unexplained mysteries, and the summative *Investigating the Unexplained* (**1972**). [PN]

ROBERTS & VINTER ◊ NEW WORLDS; SCIENCE FANTASY.

ROBERTSON, E(ILEEN) ARNOT Working name of UK writer and broadcaster Eileen Arbuthnot Robertson (1903-1961), best known for such non-sf novels as *Four Frightened People* (**1931**), whose protagonists find themselves making their way through a tropical jungle. It was written to contrast with her sf novel *Three Came Unarmed* (**1929**) which, in a striking attack on modern civilization, exposes 3 (*Homo superior*) *enfants sauvages* to contemporary England, which destroys them. [JC]

ROBERTSON, J.R. [r] ◊ ROBERT HALE LIMITED.

ROBERTSON, MORGAN (ANDREW) (1861-1915) US writer, almost always on nautical themes; many of his stories are sf or fantasy. The fantasy tales, typical of their maritime venues, tend to the mystical, the foggirt, the occult and the morose. His sf is similar, though future-WAR tales enliven the tone on occasion. MR is perhaps best remembered for *Futility, or The Wreck of the "Titan"* (1898 in untraced US mag as "Futility"; **1912** UK; vt with additional material, coll *The Wrecking of the Titan, or Futility: Paranormal Experiences Connected with the Sinking of the Titanic* 1914 US), which proved uncannily predictive in telling the tale of a great new ship called the *Titan* which steams at an arrogant pace into a iceberg and sinks. [JC]

Other works: *Spun Yarn* (coll **1898**); *"Where Angels Fear to Tread" and Other Tales of the Sea* (coll **1899**); *The Three Laws and the Golden Rule* (coll **1900**); *Down to the Sea* (coll **1905**); *Land Ho!* (coll **1905**); *Over the Border* (coll of linked stories **1914**); *The Grain Ship* (coll of linked stories **1914**).

See also: GREAT AND SMALL.

ROBERT WEINBERG PUBLICATIONS ◊ Robert E. WEINBERG.

ROBESON, KENNETH House name for authors writing the **Doc Savage** series as it appeared 1933-49 in DOC SAVAGE MAGAZINE, published by STREET & SMITH. The Robeson name is most strongly associated with Lester DENT, who wrote all but 43 of the **Doc Savage** stories; other authors involved in that initial run included William G. Bogart, Harold A. Davis, Laurence Donovan, Alan Hathaway and Rymon Johnson. 3 stories – *The Man of Bronze* (**1933**; vt *Doc Savage: The Man of Bronze* 1964), *The Land of Terror* (**1933**; vt *Doc Savage: The Land of Terror* 1965) and *The Quest of the Spider* (**1933**; vt *Doc Savage: The Quest of the Spider* 1972) – were early published in book form. Three decades later the series was brought to life again when BANTAM BOOKS began their republication of the entire run in book form. Variously released as individual titles or in omnibus format, the sequence began with the first title above listed, *Doc Savage: The Man of Bronze*, in 1964 and ended, complete, 182 stories later with *Doc Savage Omnibus #13* (omni **1990**). An entirely new sequence was then initiated, with Will MURRAY writing as KR, #1 being *Doc Savage: Python Isle* • (**1991**).

The enormously wealthy Doc Savage – aided by 5 sidekicks who specialize in various crafts and sciences at the borderline of sf – devotes his life to combating criminal conspiracies, almost all masterminded by the kind of charismatic villain later given definitive form by Ian FLEMING in the **James Bond** books. Doc Savage himself clearly influenced the creation of SUPERMAN, and stands at the heart of Philip José FARMER's **Wold Newton Family** sequence, either in his own name or disguised, with 2 titles – *Doc Savage: His Apocalyptic Life* (**1973**; rev 1975) and *Doc Savage: Escape from Loki* (**1991**) – devoted directly to him. As the original **Doc Savage** tales are of only yap Television with

Exotic Island

Home
Series 1
Series 2
Series 3
About Mark
Herpetology
FAQ

Target Species: Luminous lizard, *Proctoporus shrevei*
Location: Trinidad
Director: Andrew Sheldon

Isla de Margarita
Port of Spain
Tobago
ATLANTIC OCEAN
TRINIDAD
Venezuela
Guyana
Suriname

Location: The country of Trinidad and Tobago is located off the Venezuelan coast.

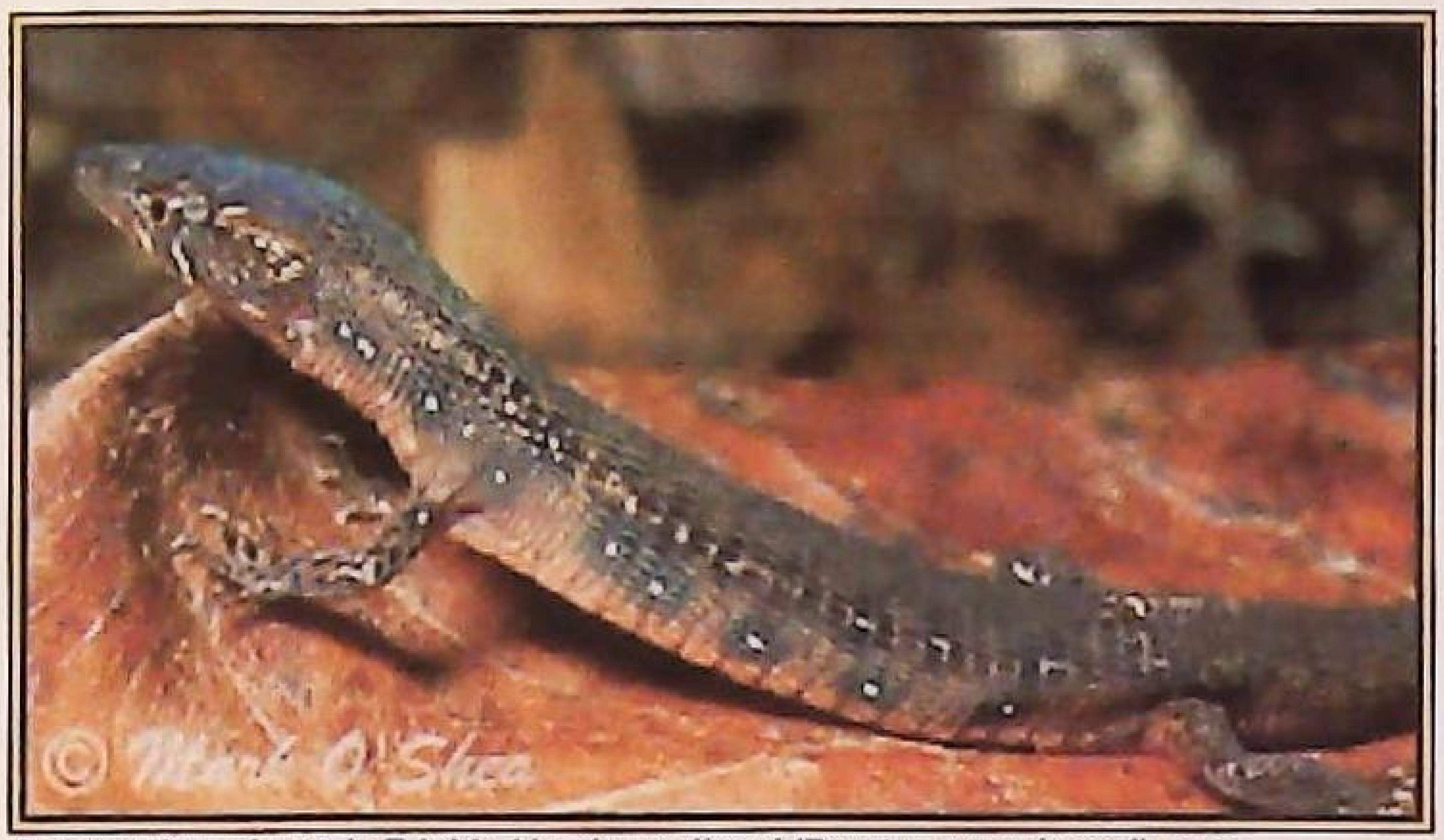
Tobago
TRINIDAD
Venezuela

Location: Aripo caves are in the northe mountains, the Caroni Swamp is south Spain.

Mark O'Shea and 'Trini' botanist Victor refer to a copy of Ivan Sanderson's 19 "Caribbean Adventure".

Mission Statement:

In 1938 "Caribbean Adventure" by British naturalist Ivan Sanderson was published. In his book Sanderson tells how he caught a small lizard in a rocky crevice in the remote Aripo Caves. He writes that, as he drove the lizard out of the crevice , the white-spots down its flanks glowed "like the portholes on a liner". The story of the Luminous lizard was born but quickly refuted by academic biologists who said it was impossible for a terrestrial vertebrate to emit light. Some set out to destroy Sanderson's reputation as a competent observer of wildlife and his later interest in the Loch Ness Monster did not help his situation. Mark teams up with retired economic botanist and proud 'Trini', Victor Quinnel to investigate Sanderson's claims, made all the more interesting by the fact that nobody has seen a live male 'luminous lizard' since he caught his specimen in the early 1930s. (Only adult males were reported to glow, females and juveniles being less colourful and lacking the red-belly and white spots.) Mark and Victor's first port of call is pay a visit on Sanderson's guide Capriata, now aged 87, who planted an orange pip on the journey. Capriata is too old to join them on the arduous trek so they are accompanied by local guide Caesar. Mark also seeks out other Trini herps and visits the Caroni Swamp to acquaint himself with the large treeboas that live there.
[Mark also meets Lakatan, whose name means 'Banana', a Rastafarian who spent 30 years naked with his family in the Trini jungle. Lakatan introduces Mark to the leatherback turtle beach where his family protect the nesting females and hatchlings heading for the ocean for the predators and poachers. This section did not make the final film.]



A close view of a male Trinidad luminous lizard (Proctoporus shrevei), note red venter and white 'port-hole' markings.

Local guide Caesar excitedly hands O'
cloth bag, containing ....

O'Shea captured this highly venomous
Terciopelo (Bothrops asper) on the trai
caves.

Species recorded during 'Exotic Island'

Species	*Common Name*
BUFONIDAE	***TRUE TOADS***
Bufo marinus	Marine toad
DENDROBATIDAE	***DART-POISON FROGS***
Mannophryne trinitatis	Trinidad rocket frog
HYLIDAE	***TREEFROGS***
Hyla crepitans	Barking treefrog
Hyla microcephala misera	Yellow treefrog
Phyllomedusa trinitatis	Trinidad leaf frog
Scinax rubra	Banana frog
LEPTODACTYLIDAE	***SOUTHERN FROGS***
Leptodactylus fuscus	Striped savanna bullfrog
Leptodactylus validus	Trinidad bullfrog
Leptodactylus sp. B (Trinidad)	(unidentified bullfrog)
Physalaemus pustulosus	Tungara frog
PSEUDIDAE	***PARADOXICAL FROGS***
Pseudis paradoxus caribensis	Caribbean paradoxical frog
DERMOCHELYIDAE	***LEATHERBACK SEA TURTLE***
Dermochelys coriacea	Leatherback sea turtle
ALLIGATORIDAE	***ALLIGATORS & CAIMAN***
Caiman crocodilus crocodilus	Spectacled camian
GEKKONIDAE	***GECKOES***
Gonatodes ceciliae	Variegated gecko
Gonatodes vittatus vittatus	White-banded gecko
IGUANIDAE	***IGUANAS***
Iguana iguana iguana	South American green iguana
POLYCROTIDAE	***ANOLES***
Anolis aeneus	Garden anole
Polychrus marmoratus	Marbled bush anole
TEIIDAE	***MACROTEIIDS***
Ameiva ameiva ameiva	Common ameiva
Proctoporus shrevei	Luminous lizard
Tupinambis teguxin	Black & white tegu
BOIDAE	***BOAS***
Corallus ruschenbergii	Ruschenberg's treeboa
VIPERIDAE	***VIPERS & PITVIPERS***
Bothrops asper	Terciopelo

Vol 3, p-2 -

witchcraft instruction and ceremonials from a basement apartment.

Sanders and Maxine were probably the most publicized witches in Britain, with a glossy antiseptic image of white witchcraft, nature cult and a constant battle with the forces of evil. Sanders appeared on radio and television programs and was regularly written up in Sunday newspapers. An account of how he and a young male assistant once casually created a spiritual baby which eventually invaded Sanders' body reads like the worst of Aleister Crowley's occult fiction, from which it may have derived. Like Crowley, Sanders likes exalted titles and has signed letters "Sir Alexander Sanders." For further information, see the biography by reporter June Johns: *King of the Witches: the World of Alex Sanders* (London, 1969; Pan paperback, 1971).

Sanders, Mrs. Celestine G. (c. 1920)

American trance medium of high standing. Reports on her trance phenomena were published by Dr. J. H. Hyslop in *Proceedings* of the American Society for Psychical Research (vol. 15, 1921) and by Dr. W. F. Prince in *Proceedings* of A.S.P.R. (vol. 18, 1924).

Sanders, Rev. C. B. (1831- ?)

A Presbyterian minister of Alabama, subject to nervous attacks from 1854 to 1876, during which a secondary **personality**, assuming the title of "X + Y = Z," developed and exhibited remarkable powers of **telepathy** and **clairvoyance**.

His story is told in *X + Y = Z; or the Sleeping Preacher of North Alabama* by Rev. G. W. Mitchell (New York, 1876). It appears that the secondary personality had command over the memories of the normal self whereas the primary consciousness remained ignorant of the doings of "X + Y = Z."

There were twelve cases on record in which this mysterious secondary personality could find lost objects, money or jewellery; he could shoot ducks at night which were invisible to his companions and write letters and sermons with his hand completely concealed under the bedcloth. A review of the case was published by Dr. W. F. Prince in *Bulletin* XI of the Boston S.P.R.

Sanderson, Ivan T(erence) (1911–1973)

Scottish-born naturalist, traveler, collector and exhibitor of rare animals, radio and television broadcaster, author. In addition to his many books on nature, travel and zoology, Sanderson also had special interest in such mysteries as the Abominable Snowman, UFOs and Fortean phenomena. In 1965 he founded the Society for the Investigation of the Unexplained.

Born January 30, 1911 in Edinburgh, Scotland, he was the son of Arthur Buchanan, famous whisky manufacturer who also founded the first game reserve in Kenya, East Africa. Ivan Sanderson was educated at Eton College (1924–27), Trinity College, Cambridge (1930–32), University of London (1933–34), M.A. honors, Cambridge University 1969. He started collecting animals in 1924, and from 1927–29 traveled around the world collecting for the British Museum. From 1932–33 he was leader of Percy Sladen Expedition to Cameron, West Africa for the British Museum, Royal Society of London and other institutions.

From 1933-34 he researched at the University of London, and from 1936–37 collected animals in the West Indies, where he also investigated the problem of human rabies carried by bats. From 1934-40 he made an expedition to Jamaica, British Honduras and Mexico, collecting animals and information for the British Museum and Chicago Museum of Natural History.

He was a member of British Naval Intelligence from 1940-45, rising to the rank of commander. He was information and overseas press analyst for the British Government in New York from 1945-57, after which he took up residence in the U.S., engaging in television and radio work from 1947-58.

From 1961-65 he was senior trade editor and special science editor for Chilton Book Co., Philadelphia, freelance writer and editor from 1965–67, science editor of *Argosy* 1968–70. His first radio show was for the British Broadcasting Corporation in 1930; he also conducted radio and television series in the field of natural science for NBC and other stations in 1948, inaugurated the first commercial color television program for CBS in 1950 and was featured regularly in the Garry Moore program for 1950-58, exhibiting live animals.

In 1959 he made a 60,000 mile trip around the North American continent, studying its phytogeography and basic biotic ecology. As an importer of rare animals, he exhibited them at his private zoo in New Jersey. Unfortunately his unique collection was destroyed by fire in 1953, and a second collection by floods in 1955. Sanderson was a fellow of the Royal Geographical Society, the Zoological Society, London, and the Linnean Society.

In addition to Sanderson's many contributions to such magazines as *Saturday Evening Post, Reader's Digest, American Heritage, Horizon, True, Sports Afield* and *Saga,* he also published the following books (some illustrated by himself): *Animal Treasure* (Book-of-the-Month Club selection, 1937), *Caribbean Treasure* (1939), *Animals Nobody Knows* (1940), *Living Treasure* (1941), (under pseudonym Terence Roberts) *Mystery Schooner* (junior Literary Guild selection, 1941), (ed.) *Animal Tales* (1946), *How to Know the North American Mammals* (1951), *The Silver Mink* (fiction, 1952), *John and Juan in the Jungle* (juvenile fiction, 1953), *Living Mammals of the World* (1955), (under the pseudonym Terence Roberts) *The Status Quo* (fiction, 1956), *Follow the Whale* (1956), *The Monkey Kingdom* (1957), *Abominable Snowmen: Legend Comes to Life* (1961; abridged ed. Pyramid Publications, 1968), *The Continent We Live On* (1961; British ed. titled *The Natural Wonders of North America,* 1962), *The Dynasty of Abu* (1962), *Ivan Sanderson's Book of Great Jungles* (1965), (with editors of *Country Beautiful*) *This Treasured Land* (1966), *Uninvited Visitors; A Biologist Looks at UFO's* (1967), *"Things"* (1967), *More "Things"* (1969), *Invisible Residents: A Disquisition Upon Certain Matters Maritime, and the Possibility of Intelligent Life Under the Waters of This Earth* (1970), *Investigating the Unexplained* (1972), *Green Silence* (1974).

He died February 19, 1973.

His Society for the Investigation of the Unexplained continues his work in collecting data and maintaining a library on such subjects as unusual precipitations of animals, earthquake and tornado anomalies, mysterious

MILFORD CITIZEN
WEDNESDAY, FEBRUARY 21, 1973

• OBITUARY •

IVAN SANDERSON

Ivan Sanderson, 62, a naturalist, zoologist, writer, and world traveler, was found dead in his rural home in Warren County, near Columbia, N.J., Monday night, state police at the Blairstown Barracks reported yesterday.

Sanderson in 1961

Sanderson, known to millions because of 20 books he had written and his appearances on network TV talk shows, was born in Scotland and remained a British subject even though he had lived in the United States for many years.

He traveled in more than 60 countries and wrote about their animals, and their humans, as well. In 1960, he made a 57,000-mile tour of North America and wrote about it in a book, "The Continent We Lived On."

IVAN T. SANDERSON DIES AT 62

COLUMBIA, N.J.—Noted naturalist and zoologist Ivan Sanderson, founder of the Society for the Investigation of the Unexplained, has died at age 62. Sanderson, an Edinburgh, Scotland native and British citizen, was pronounced dead on arrival Monday at Warren Hospital after his widow, Sabina, found him in their two story home in rural Warren County.

IVAN SANDERSON, NATURALIST, DIES

Author of 'Animal Treasure' Did Radio and TV Series

COLUMBIA, N.J., Feb. 20 (AP)—Ivan Sanderson, the author and naturalist, died yesterday of cancer. He was 62 years old and lived on a farm here.

Mr. Sanderson gained national attention with his book, "Animal Treasure," published in 1937.

3 emd dash

Mr. Sanderson, a native of Edinburgh, Scotland, made the first of his many expeditions at the age of 17, between studies at Eton and Cambridge University, collecting small animals for the British Museum. After receiving a bachelor's degree in zoology, geology and botany, he led a small expedition to the Cameroons in West Africa, where he spent a year collecting small animals and observing them in their natural habitat. He was on assignment from the British Museum and Cambridge and London Univer- [illegible]

[illegible] book, "Animal Trea- [illegible]

1956

Ivan Sanderson

After World War II service in the Caribbean with British naval intelligence, Mr. Sanderson settled in Columbia and continued as a prolific writer of nature books for adults and children.

Among his more recent books were "Elephants" (1959), "Abominable Snowmen: Legend Come to Life" (1961), "The Continent We Live On" (1961), and "Ivan Sanderson's Book of Great Jungles" (1965).

Mr. Sanderson conducted se- [illegible] tele- [illegible] TV pro-grams was the first regularly [illegible]

Sally MacDougall Dead at 97; Feature Writer for The World

Special to The New York Times

MILWAUKEE, Feb. 20—Sally MacDougall, a feature writer who began with The World of New York in 1919 and continued with its successor newspapers until her retirement in 1959, died yesterday in a nursing home here. She was 97 years old and had lived in Manhattan's Greenwich Vllage until two years ago.

Miss MacDougall was stenographer until she sold her first feature story to the now-defunct Milwaukee aily News.

She was hired in 1910, and her routine, as she described it, was "society in the morning and murders in the afternoon."

Moving to New York, she wo a place on The World, a daily that especially prized good writing by its reporters.

Once when she wanted to see Grover Whalen, the city's greeter and a major news source, and someone tried to keep her out, Miss McDougall blazed:

"Look here, I talk to God every day. Why the devil can't I talk to Grover Whalen?" She get her story.

Twice she won annual awards of the New York Newspaper Women's Club for a 1943 series, "The Wounded Speak," about visits to a World War II service hospital and [illegible] for an article about Dr. A[illegible] Schweitzer, "I Have Found [illegible] Livin[illegible] Sain[illegible]" S[illegible] presi-

co-workers at The World-Telegram and The Sun gave her a silver bowl inscribed:

"Indomitable newspaperwoman, relentless reporter, implacable Presbyterian, unconquerable Scot. . . ."

Mrs. Joseph Urban Dies, New York School Trustee

Mrs. Mary Beagle Urban, widow of Joseph Urban, the the North Sea about 170 miles noted architect and designer, on Saturday, apparently of a heart attack, at her home, 27 West 10th Street. She was 91 years old.

Mrs. Urban was a trustee of the New York School, the original building of which was designed by Mr. Urban, from 1937 to 1943, and was active in the institution's development.

She was on the liner Andrea Doria when it sank after a collision with the Stockholm in 1956.

She leaves a brother, Edward,

E. W. BOYER

BLOOMINGTON, Minn., Feb. 19 (AP)—E. W. [illegible] Boyer, [illegible] Calif. [illegible] 67 years old.

Mr. Boyer served as presiden[illegible]

HOWELL E. JACKSON OF RACING IS DEAD

His Bull Run Farm Entries Bore Colors Dating to 1820

Special to The New York Times

MIDDLEBURG, Va., Feb. 20—Howell E. Jackson, an owner and breeder of race horses whose maroon silks are reportedly the oldest in the United States, died Saturday. He was 76 years old.

He leaves his wife, the former Dorothy Patterson, daughter of John J. Jackson, founder of the National Cash Register Company, and two stepdaughters.

Raced Recently in France

Mr. Jackson, who owned Bull Run Stud Farm, in recent years had raced his horses in Mrs. Jackson's name and had won some 24 races in France.

Stakes performers Round Top, Music Man and Wanderer paced the winners. Never Too Late, an American-bred and French-trained filly, won two [illegible] 1960. [illegible] of [illegible] Ass[illegible]

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New York, New York
Feb.21, 1973 Wed. New York Times

IVAN SANDERSON, NATURALIST, DIES

Author of 'Animal Treasure' Did Radio and TV Series

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His first book, "Animal Treasure," was something of a novelty in thati t focused on anecdotes concerning the animals. It was a Book-of-the-Month Club selection. "Caribbean Treasure" followed in 1939 and "Living Treasure," dealing with Jamaica, British Honduras and Yucatan, in 1941.

1956

Ivan Sanderson

After World War II service in the Caribbean with British naval intelligence, Mr. Sanderson settled in Columbia and continued as a prolific writer of nature books for adults and children.

Among his more recent books were "Elephants" (1959), "Abominable Snowmen: Legend Come to Life" (1961), "The Continent We Live On" (1961), and "Ivan Sanderson's Book of Great Jungles" (1966).

Mr. Sanderson conducted several series of programs on animal lifeo n radio and television. Among the TV programs was the first regularly scheduled color broadcast, "The World Is Yours," on the Columbia Broadcasting System in 1951.

June 1 , 1985
7 Arlmont Street
Milford, Connecticut
06460

Sabine W. Sanderson
c/o SITU
P.O.Box 265
Little Silver , New Jersey
07739

Dear Mrs. Sanderson :

I am writing to you in regards to an request of information that concerns your late husband , Ivan T. Sanderson .

I am presently doing a book on marine monsters . Please note that this is not a general book on this subject , but one of extreme serious , on the order of Heuvelmans , Wake of the Sea Serpents . In 1948 , Sanderson was personally involved with the Santa Clara collusion with a sea monster off the North Carolina coast . In mid-January of this year , 1948 , he was contacted by a news service to personally interview the officers who had sighted this animal and to verified what did actually had occured . At a later date in 1964 , he had written an article , Mariners Beware! , The Lookout , for April 1964 , concerning this incident and other sightings .

I am aware that he use to keep a diary of his daily events and that he may have left additional notes concerning this specific Santa Clara incident. Is there a possibility that I may be able to acquire copies of them , to be use in my book that I am writing ?

In the past , I have had several articles published in Pursuit , mostly regarding water and sea monsters , so it does give an indication of my background .

I await your reply on this matter .

Sincerely ,

Gary S Mangiacopra
Gary S. Mangiacopra

Dear Mr. Mangiacopra,

I'm sorry to have to disappoint you, but Ivan did not keep a diary after 1944 and did not start to save correspondence until the 1960's. His letters to his mother contain only personal and business news, e.g. progress on a book. If there are any materials on this, they would be in SITU's files.

Sincerely,
Sabina W. Sanderson

recvd July 12, 1985
gsm

Science Illustrated Nov 1948 Nov B Vol 3/11
McGraw-Hill Pub Co. Albany, N.Y.

REAL HOPE FOR THE deafened!

If you're hard of hearing—or if you have a friend who is—send for A FREE COPY of the informative new booklet, "Modern Science and Your Hearing." Published by Western Electric, it contains much valuable, encouraging information about deafness—how it occurs, what science now knows about helping the deafened. We'll also send you, free, information about Western Electric's newest all-in-one hearing aids, designed by Bell Telephone Laboratories.

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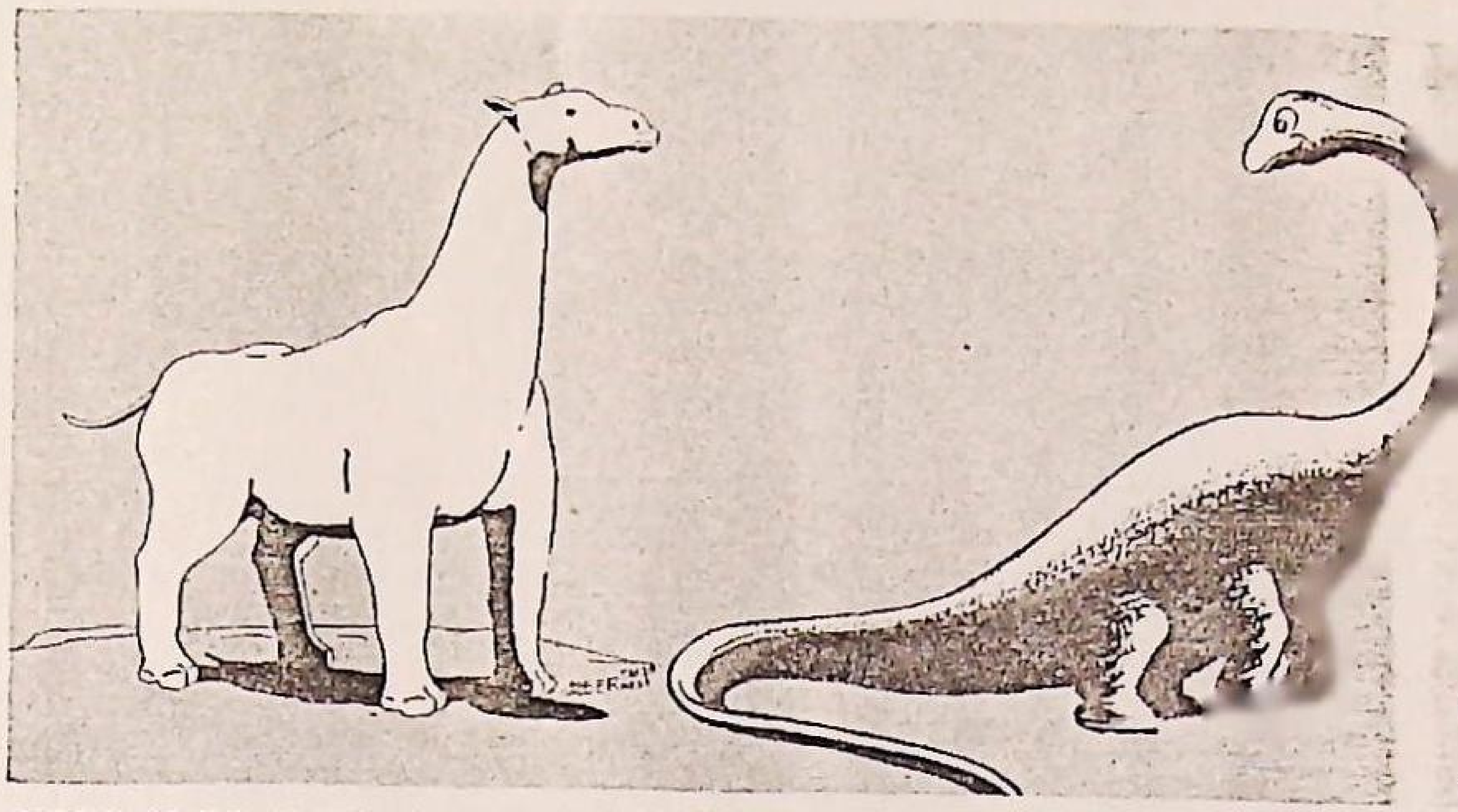
LETTERS
TO THE EDITORS



MORE SI READERS than you could shake a stick at are intimately acquainted these colossal fossils. On the left is the baluchitherium, on the right the bronto

WHAT ABOUT THOSE BALUCHI?

Sirs:

In your illustration of a baluchitherium (*How Large Is Life?*, August), you show something that looks suspiciously like a reptile. But you said the baluchitherium was the largest land *mammal.* Am I wrong?

Myron C. Bennett
Cincinnati, Ohio

Sirs:

. . . The drawing showed not a baluchitherium (a mammal which was the precursor of the rhinoceros), but a brontosaurus (a reptile, like the other dinosaurs).

Norman S. Wood
Boothbay Harbor, Maine

Sirs:

Why don't you go soak your heads in a bucket of reptile eggs? . . .

Henry Hedgpeth
Ann Arbor, Michigan

Sirs:

. . . Enclosed you will find my sketch of the true likeness of the baluchitherium. No charge; it's all in the interest of science.

Robert E. Gilbert
Kingsport, Tennessee

SI's artist slipped in the primeval mud, came up with the wrong beast. Our illustration was indeed the picture of a brontosaurus. Reader Gil baluchitherium (see above, left) is, ever, the real McCoy.

LONG STORY

Sirs:

In the August issue you have app ently added 100 feet to the length of *Grille* in the article *Hitler's Super Y* You stated that the yacht is 476 long, but according to the Navy partment's publication 204 of Germ naval vessels, she is only 377. W wrong?

James B. Ste
Harrison, New York

A lot of people. Lloyd's Regist Shipping, 1948, *lists the* Grille *at feet.* James' Fighting Ships *calls it feet. The Navy Department publica to which reader Stewart refers calls 377 feet—which agrees with the so-c Thames Measurement of the Grille a length, but a complex index of factors. Best guess: 476 feet, as told SI by present owner George Arida, should know.*

TAKE A DEEP BREATH

Sirs:

I want to congratulate you on *Fascinating History of Artificial R ration* (SI, August), especially for easy, understandable way you brou out the subject through photogra

Science Illustrated August 1948 Vol 3 # 8

p42, 43, 82

How Large Is Life?

A report on the size of things—including the startling fact that the largest animal that ever lived is still roaming around today...and that you are both a cumbersome giant and a pygmy, depending on who is looking at you.

by *Ivan T. Sanderson*

THE SIZE OF LIVING THINGS is a fascinating study in extreme contrasts. The giant gum trees of Australian valleys reach a height of over 350 feet. At the other extreme, 68,000 bacteria can be crowded on the top of a small pinhead. There is a warm-blooded animal that reaches a length of 115 feet, weighs one ton per foot of its length; and there is a bird so small it can nest in an eyecup.

The range of size in animals is even more enormous than these examples suggest—the biggest being 100,000,000,000,000,000,000 (one hundred quintillion) times greater than the smallest.

To look into the matter of size scientifically, it is first necessary to set up some standards of measurement. When dealing with animals this problem is fairly easy. All animals are made of some form of protoplasm, which has nearly the same specific gravity as water, so that one gram of weight is roughly equivalent to one cubic centimeter of volume. Thus, weight is a valid criterion for judging the size of animals, and the measurement of weight is easily obtained.

Bulk is hard to measure, even by the displacement method, and it is a dangerous thing to try to estimate. Using weight as a standard, it is possible to classify the animals of this earth and arrange them in ascending order on a scale (see pages 40-41).

To do this it is convenient to take one gram as the starting point and then construct a series of terraces going upwards and downwards, each ledge re
senting a tenfold increase or decrea
size. All the animals weighing be
one ounce and ten ounces will
the first terrace going upwards; all
between ten and a hundred ounces
second; those between a hundred
thousand ounces, the third, and
Going downwards, those animals
ing between one ounce and a tent
ounce will be on the first ledge
those between a tenth and a hun
of an ounce, the second, and so

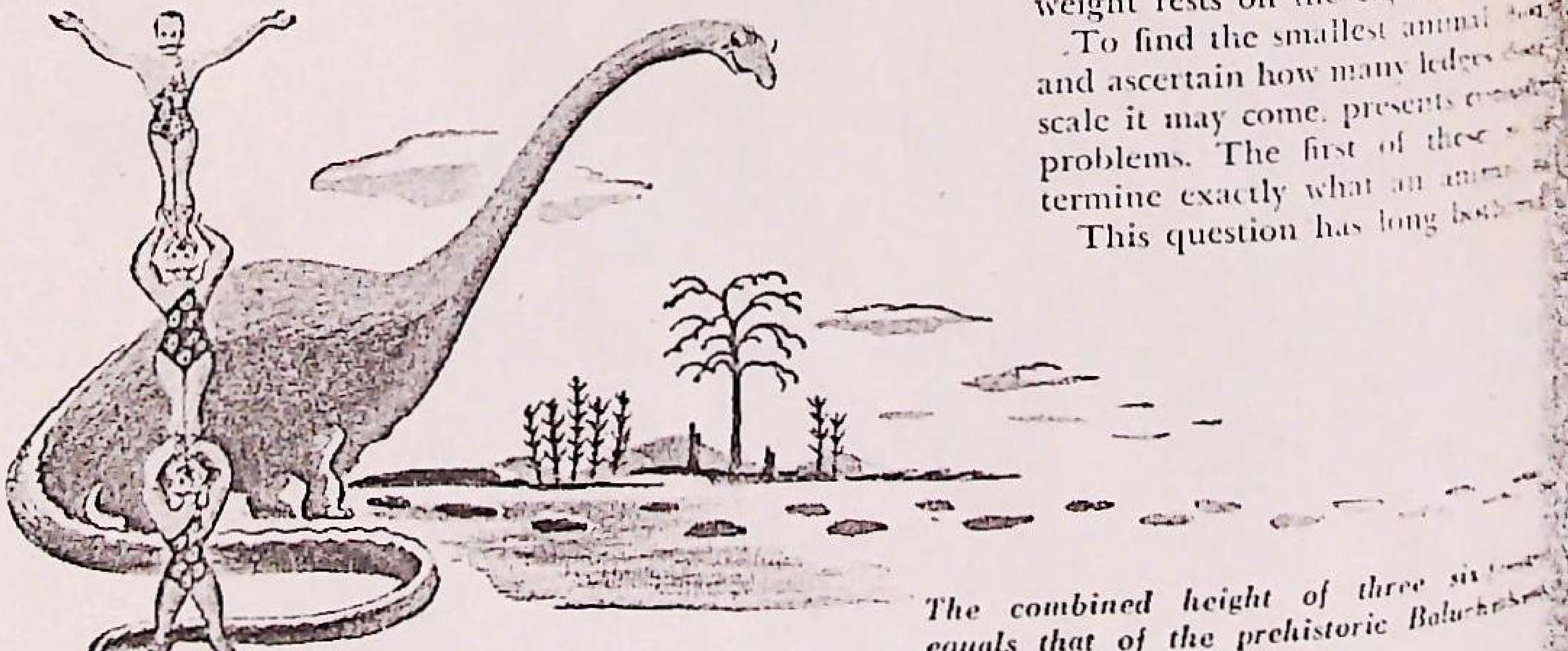
The number of terraces that yo
wards and downwards depend upon the
size of the largest and of the smal
animals that can be found. Once the
have been found, all the ledges can
counted, divided in half, and the av
weight found of all animals—the
that are neither big nor small. All
above this point may then be said
big, all those below, small, and the
can be seen where man, the mouse
the elephant come in.

Immediately this has been done
amazing things come to light
largest living animal happens
be the largest creature that has
lived. It is the great Blue Whale
due to its massive compact
lindrical shape, is vastly bulkier
any of the dinosaurs of bygone
Even the mighty *Atlantosaurus*
thigh-bone longer than the talle
was for the most part tail, lim
neck, and its body was
the size of an elephant.

The most gigantic land mam
ever lived, called *Baluchitherium*
had a skull four feet long and
eighteen feet in height, could
up inside a Blue Whale along
mate and one of its offspring. The la
elephant ever shot, an African
measuring twelve feet six inches
shoulder, could stand inside
Whale's skin and have ample clea
The 115-ton Blue Whale weigh
a ton per foot of its length
there are roughly a million gra
ton, it can weigh 115 millio
Thus, the Blue Whale by its
weight rests on the eighth terra

To find the smallest animal
and ascertain how many ledges
scale it may come, presents
problems. The first of these
termine exactly what an anim

This question has long bee



The combined height of three si
equals that of the prehistoric Baluch

losophers, and continues to pester the average high school biology student. First, animals are divided into two great classes—those that are made up of many cells and those, like the amoeba, that are composed of only one cell. These latter are, as a whole, smaller than the multi-celled, or metazoon animals, and some of them are very small indeed.

However, there are also both multi-celled and single-celled plants, and it is sometimes impossible to tell whether a single-celled creature is a plant or an animal (SI, Oct. 1947). Then there is the problem of the parasitic, single-celled plants and animals which are often smaller than their free-living, or non-parasitic, relatives. Below these again come the bacteria which pass ever downward in size to the ultra-filterable viruses, too small to be seen under any ordinary microscope. These strange organisms are on the very threshold between animate and inanimate things; some of the time they may behave as crystals but at other times—when they start to work on a living human body, for example—they are alive. Where then is the limit drawn as to size for animals?

Infinitesimal Things

Bacteria and anything smaller in the scale can be disregarded for, although they are alive, they do not show a complete set of animal attributes. Also, there is a difference between creatures that are definitely animals and those that are obviously plants. Of the remainder, the smallest is an infinitesimal parasitic thing that lives in the red corpuscles of the blood of certain hoofed animals. It is only one ten-trillionth of an ounce in weight, which puts it near the twelfth shelf down the scale.

The smallest non-parasitic animal is a single-celled creature named monas, an infinitestimal oblong of protoplasm about one ninety-millionths of an ounce in weight, thus hovering between the tenth and eleventh ledge down the scale. If, therefore, the largest animal is nine terraces up and the smallest eleven down, the average animal must be one ledge down, which is to say it must weigh a tenth of an ounce. What animals, then, are of this size?

Surprisingly, this place is occupied by the housefly and by the great majority of ants.

Having discovered the limits and the mean size of all animals, it is now found that the average man and woman rest on the fifth step up from the ants. But there have been men weighing as much as a quarter of a ton. It would take a nest of a million ants to make one of him. This moves him up one ledge and puts him in a class with a surprising assortment of the biggest creatures. He is then found to be only as heavy as the largest lizards—the Giant Komodo Dragons from the East Indies—and smaller than the biggest birds or the biggest jellyfish.

This latter monster lives in the northern part of the Atlantic, has a diameter of seven feet, is eighteen inches tall, and has tentacles five feet long and as thick as a man's thigh at the base. It is as bulky as the largest horse. Some shellfish are ten times bigger; in the same class, in fact, as the largest living land animals, the rhinoceroses and the elephants. These are the giant squids with cylindrical bodies weighing up to three tons and tentacles forty feet long. The largest clam weighs, with its shell, as much as a man. This is the *Tridacna* of the Great Barrier Reef, which is three feet long and can hold a fair-sized tug if it is attached to solid rock and closes its shell on the vessel's anchor. The average man owns only two and a half cubic feet of flesh: Tridacna's is not much less. Some fishes are larger than elephants. These are the barrel-formed basking sharks, as harmless as they are vast, and rivalling the biggest dinosaurs in bulk.

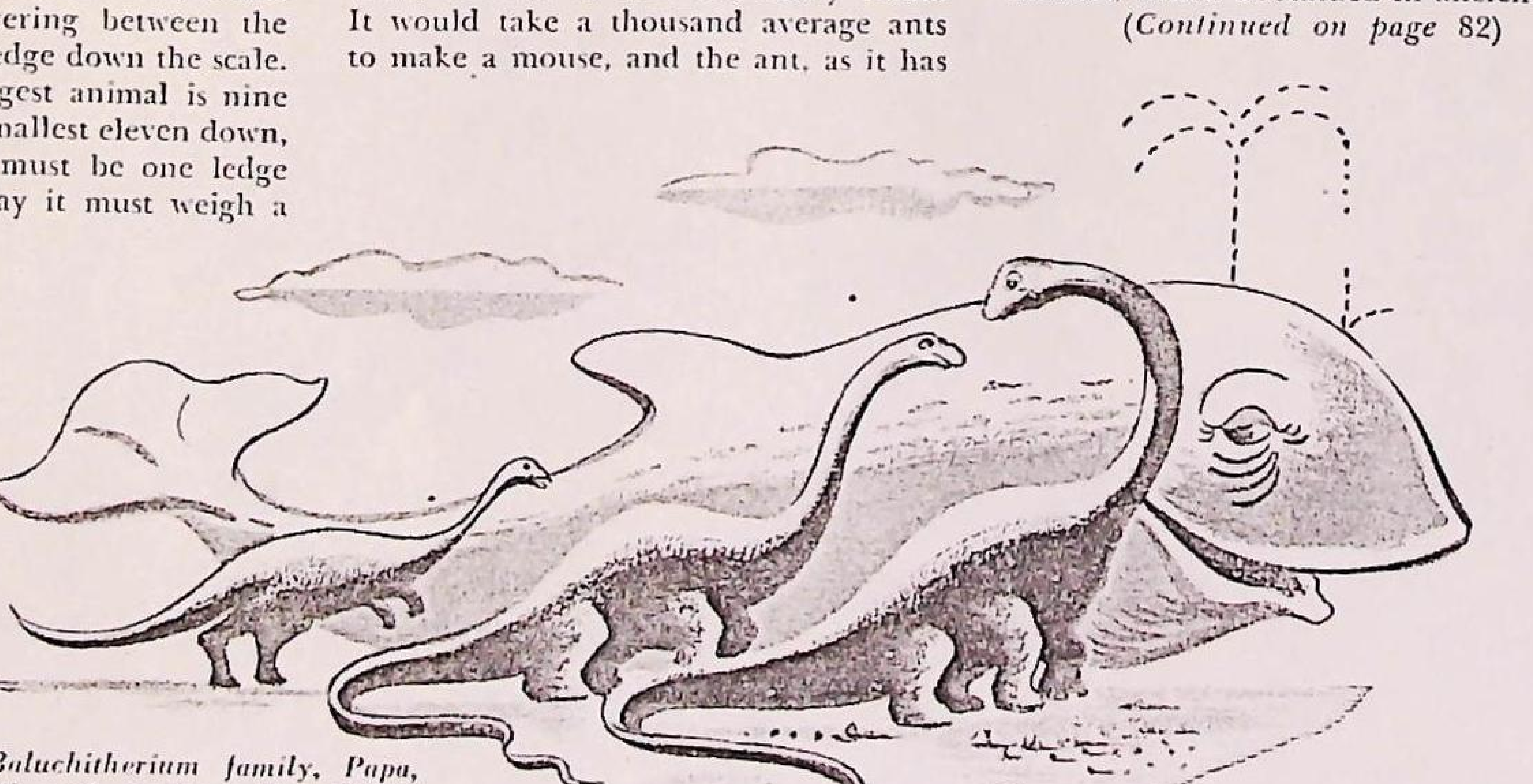
Man or Mouse

Man, then, is really a very big creature, and a mouse, which is a thousand times smaller is still not really small. It would take a thousand average ants to make a mouse, and the ant, as it has been seen, is the norm. A human egg, or ovum, is five places down and an adult man five places up from the one-gram level, so that his size increases by ten billion times during growth. Yet, when he has finished all this growing he barely tops the largest flying bird and the largest crab in size. The albatross may have a wing-span of fourteen feet but the condor is the largest of all flying birds, and yet it would have to be multiplied by more than ten times to match the great extinct Moas of New Zealand—flightless birds with long legs and necks, not unlike tremendous ostriches. The largest crab and the greatest of the jointed animals, to which the insects and lobsters also belong, is a spider-crab known as "Mr. Kampfert's Long-handed One," found off the coasts of Japan. It reaches eleven feet when its arms are fully spread.

The Large and the Small

It has been shown that single-celled animals are, as a whole, smaller than the many-celled ones; also that a human egg, which is initially a single cell, is five steps down the ladder. What then is to be made of a single cell, also an egg, weighing ten pounds and being bigger than the average human child when born? Such was the yolk of the egg of a fantastic extinct bird called the *Aepyornis*, (SI, October, *Science on Parade*), that lived in Madagascar and probably gave rise to *The Arabian Nights* story of the Roc. This creature had a head like a long-billed parrot of colossal dimensions, a body like a cassowary, and laid its five-gallon eggs in the sand dunes by the Indian Ocean, where they are still sometimes dug up to this day. An egg cell is an exceptional kind of cell and is really "parasitic" in a manner of speaking—at least it is not a free-living entity. However, creatures called nummulites, which abounded in ancient seas

(*Continued on page* 82)



. . . but a whole Baluchitherium family, Papa, Mama, and Baby, could nestle inside a Blue Whale

n page

Science Illustrated, Vol 3 # 8, August 1948

DISCOVERY

Wood Used To Make Whisky

RECENT RESEARCH has taught chemists to make an unusual variety of substances from wood. These include:

1. *Whisky*

Alcohol identical in quality with that now made from grain can be obtained from sawdust, freeing huge quantities of corn and wheat for shipment to Europe. A plant has already been built which can supply enough alcohol for 25,000,000 gallons of whisky annually. Present federal regulations, however, prohibit use of such whisky.

If these government regulations are rescinded, labels on whisky bottles may read "sawdust neutral spirits" where they now read "grain neutral spirits." You probably wouldn't be able to tell the difference by the taste, the chemists say.

The more than 10,000,000 tons of sawdust wasted each year could supply more than three times the demand for alcoholic beverages. Every ton of wood waste turned into alcohol would replace 20 bushels of corn or wheat.

2. *Sugar*

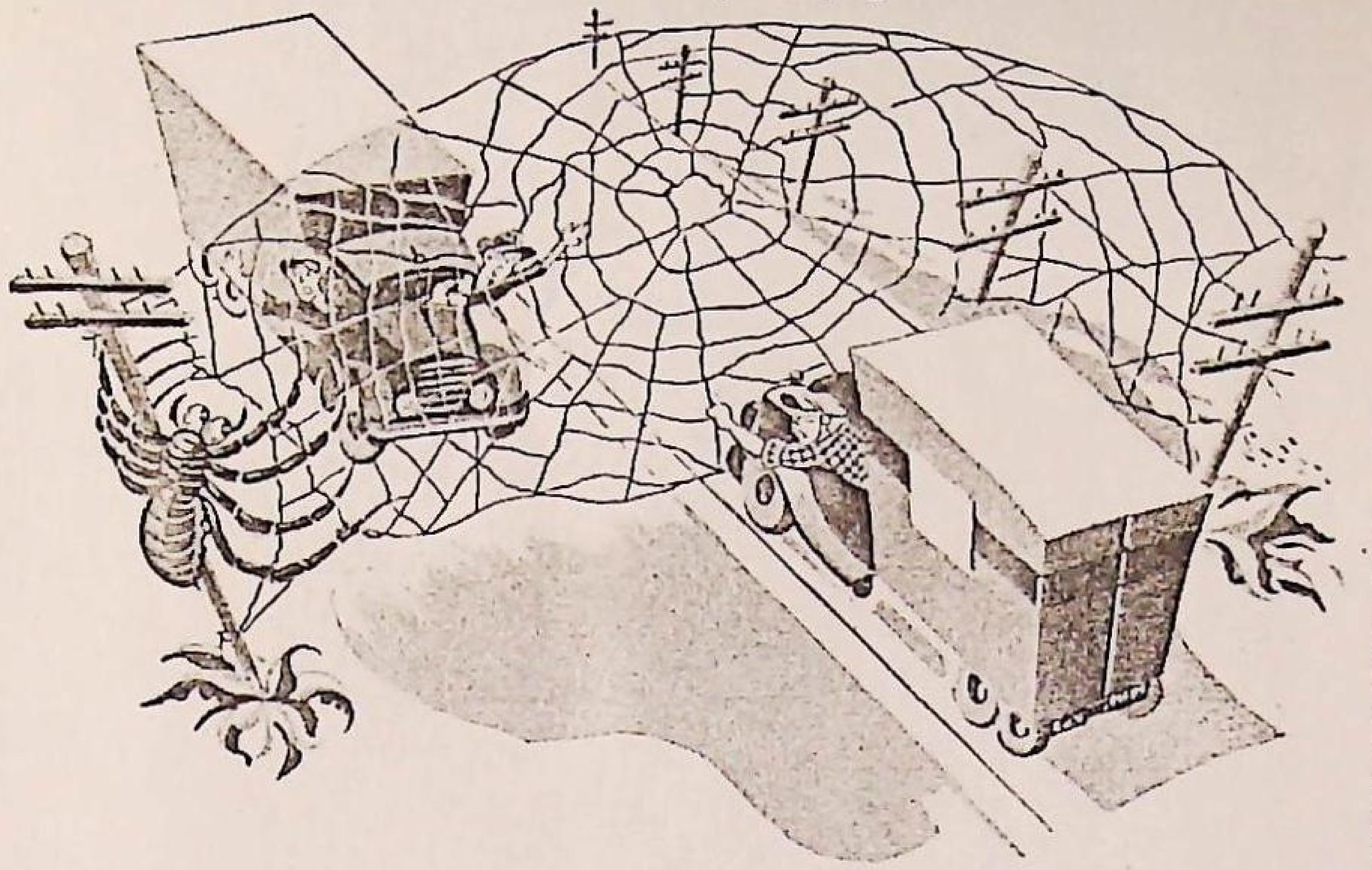
A relatively simple process turns wood into sugar. Researchers find that oak wood treated with a little sulfuric acid under steam pressure yields 45 per cent sugar.

3. *Suntan lotions and cosmetics*

To produce these substances chemists start with the liquid wastes of the wood-pulp industry. From these they obtain vanillin like the flavoring used in cakes and ice cream. Compounds of vanillin are suitable for making the finished products.

Chemists are paying attention, also, to fuels. They have learned recently to distill 100 per cent pure alcohol for use in engines at the same cost as ordinary industrial alcohol. And they are experimenting with a method for making gasoline thicker so that it can be handled and stored like a solid.

The 100 per cent alcohol will prove valuable in countries short of fuel, but it is not suitable for wide use here because it costs more than gasoline.



Some East Indian spiders playfully block wide roads with their webs; others, large enough to blanket a twelve-by-eight-inch dish, eat birds for dessert.

and which are found fossilized as round, flat discs about the size of a quarter, were free-living, single-celled animals—the biggest that ever lived. Astonishingly, they were larger than the smallest birds, fishes, and frogs, and only just smaller than the smallest mammals, all of which are creatures made up of hundreds of millions of cells.

The smallest mammals are tiny shrews, which are not much bigger than the last joint of the middle finger. The smallest hummingbirds have bodies about the sizes of bumblebees. They weigh only as much as 100 houseflies, and it would take 100,000 of them to make a man. Yet they are by no means the smallest animals with backbones. They are more than ten times bigger than the smallest fish, a tiny relative of the carp found in the Orient, and are nearly 100 times larger than the smallest backboned animal of all. This is a tropical frog delighting in the name of *Phyllobates limbatus,* that lives on the moist leaves of equatorial forest trees, to which it adheres by means of suction pads, and which carries its tadpoles on its back.

Complex Animals That Are Minute

Some animals incorporating three pairs of jaws, complex eyes, three pairs of legs, nervous, blood, and breathing systems, reproductive organs, and various sense organs are extremely minute. There are, for instance, beetles and wasps smaller than the human ovum, or 500,000 times smaller than a housefly. Some worms, also with complex anatomy, are ten times smaller than that, and the minutest of all multi-celled animals—male, aquatic wheel-animalcules (invisible to the naked eye)—are 100 times smaller again.

In dealing, as has been done so far with mere bulk, a number of other astonishing facts about the size of animals has been missed. For instance, the biggest frog, one *Rana goliath* of the Cameroons in West Africa, is as big as a Pekinese dog; and tape worms 70 feet long and dignified by the name of *Bothriocephalus latus* have been taken out of the gut of man, which measures only 32 feet. Some spiders can spin webs across highways on which two trucks can pass with room to spare (see above). There are beetles as big as rats, and marine worms bigger than pigeons.

The largest living thing, one of the giant redwood trees of California, is ten times bigger than the largest whale, and the smallest virus is 100,000 times smaller than the little single-celled, free-living monas. Thus the total range of life is terraces on the scale. How does this fit into the total scheme of things?

Physicists give exact measurements of molecules, atoms, and electrons. Molecules cover five terraces, a single hydrogen atom being just 23 ledges down. Electrons are 50,000 times smaller, going down almost to the 28th ledge. Astronomers and mathematicians have also computed the sizes of the heavenly bodies and of the universe itself. The earth, for instance, comes nearly 28 terraces up, the sun 33, and the universe somewhat over 57 terraces up. There are thus 85 terraces in all. Even the sun is quite small in relation to the universe, and there are other universes beside ours. Measured against this vast scale, everything on this earth becomes relatively smaller and smaller. Man may feel big when he contemplates the mouse, but in terms of the universe the size of each is equally insignificant.

NEWSPAPER: THE NEW YORK TIMES
LOCATION: NEW YORK, NEW YORK
DATE: 14 SEPTEMBER 1952
NEW YORK TIMES MAGAZINE SECTION
PAGE 24-25, 37, 39

14 Sept 1952 N.Y. Times section VI

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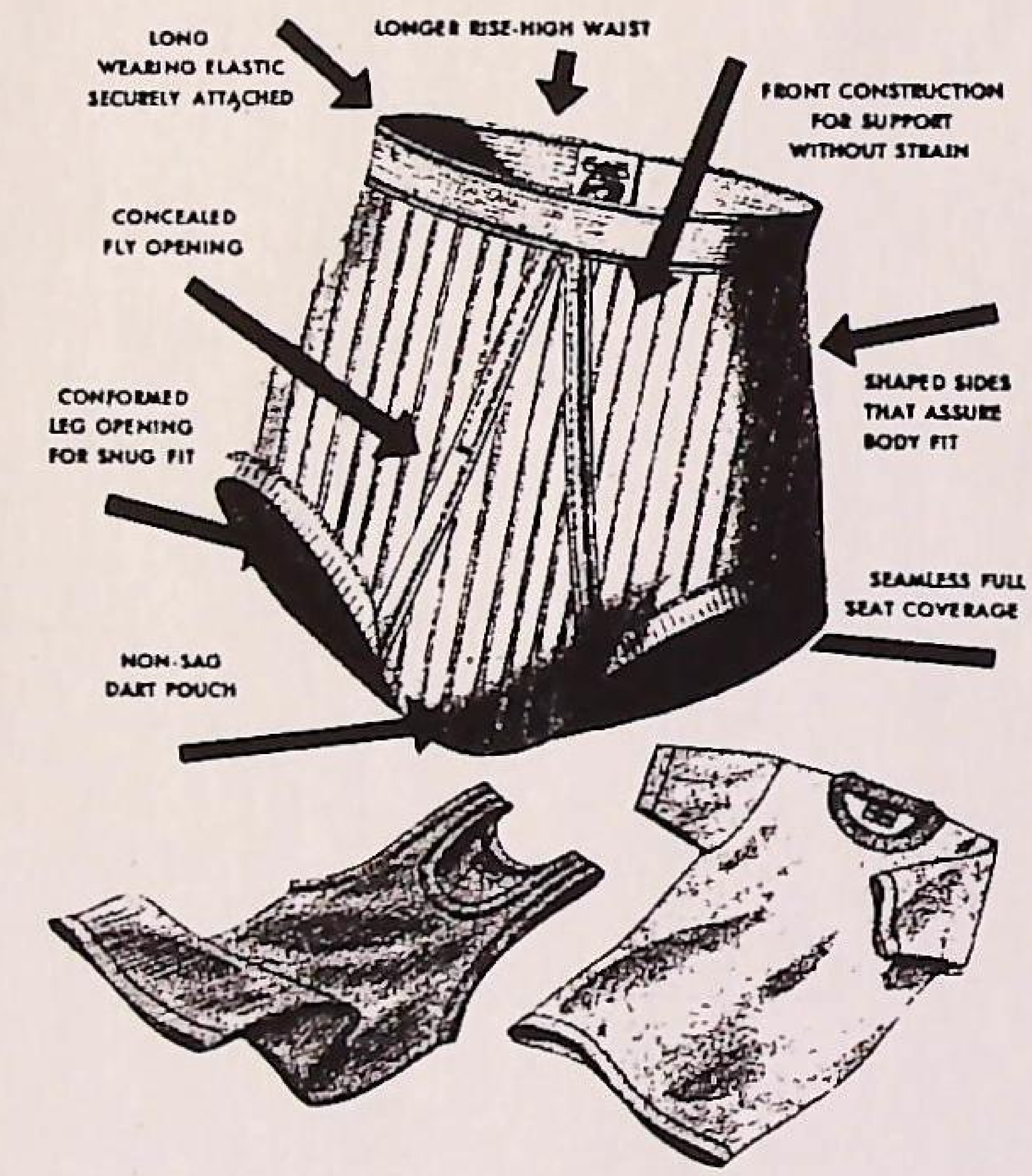
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Letters

ROSH HA-SHANAH

TO THE EDITOR:

May I call your attention to an error in your calendar of events for September, published Aug. 31?

You list Rosh ha-Shanah, the Jewish New Year, as beginning on Sept. 21. The observance of Rosh ha-Shanah begins at sundown on Sept. 19, and continues on Sept. 20 and 21. JOSEPH JACOBS.

New York.

'SAGE ADVICE'

TO THE EDITOR:

Bertrand Russell's "As School Opens—The Educators Examined" (Sept. 7) seemed to me a succinct summary of the spirited discussions that took place this summer in our Philosophy of Education course at Hunter College. The aspiring young teachers who had been brought up under the "traditional" system of education balked at the idea of using only the new, "progressive" methods which John Dewey's philosophy implies.

While we conceded that "traditional" education has its faults, our objections to the "progressive" system were almost exactly the same as the ones Mr. Russell mentioned. I was very happy to see that our opinions were supported by those of such a great thinker. SUSI HILLBURN.

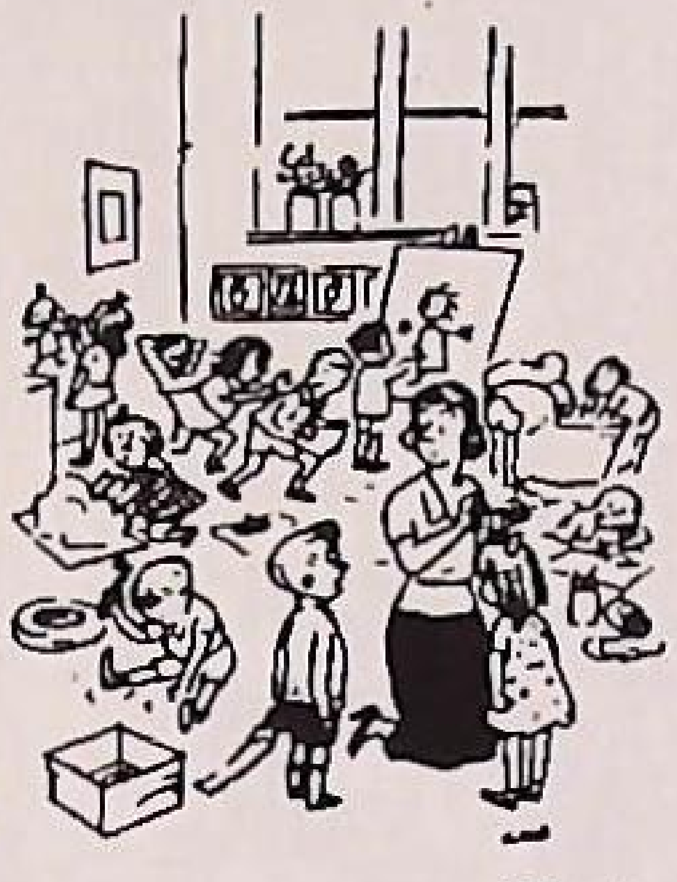
New York.

PROTEST

TO THE EDITOR:

It would be a great pity if uninformed readers should accept Bertrand Russell's criticisms, presumably of British progressive education, as applying equally to American progressive schools. His general discussion in support of the modern type education we can applaud, but we who have taught the American progressive way have to protest most of his criticisms. We cannot admit that the early stages of any learning area have to be dull. Nor can we accept that a "great deal" of the school program should "follow an unquestioned routine." Again we know better.

As to unlimited initiative, that we have never permitted; we have always expected positive guidance by the teacher. Mr. Russell's assertions that bad manners result from progressive education, and that the progressive school is "too easygoing" to give "adequate preparation" for current community life—both assertions we reject most emphatically.



©Punch

Modern school, Britain: "Isn't there *anything* we mustn't do?"

Perhaps Mr. Russell's most indefensible statement, at least as far as regards our schools, is that "they tend to sacrifice citizenship." The exact contrary holds.

WILLIAM HEARD KILPATRICK

New York.

'NEW APPROACH'

TO THE EDITOR:

According to Edward Crankshaw's "The Question: 'Does Stalin Want War?'" (Aug. 31) we still live in dreadful fear of Moscow. Yet he quite convincingly shows, presumably to allay our fear, that Russia cannot afford a war, nor desires one.

I believe the Russians fear us no less than we fear them. The Russian tactics are rather Fabian. They think that by carrying on a war of nerves and by waiting, the Western powers will exhaust and bankrupt themselves.

Mr. Crankshaw seems to have the answer to all this in his last paragraph: "A new approach." The old policy of being tough and not to yield an inch must be changed to being fair, and to give-and-take. Acrimony and calling names should be changed to diplomacy and finesse.

WILLIAM J. TRESTMAN.

New York.

'MOULIN ROUGE'

TO THE EDITOR:

I noted with great interest the display about the cinema "Moulin Rouge" in your issue of Aug. 31. One part of the text I would like to call to your attention. Pierre La Mure, author of the book from which the film is drawn, is referred to as a French author.

Mr. La Mure has been in America since 1933, and has been an American citizen since 1938. He prefers being described as an American.

CONSTANCE BERNARD.

Beverly Hills, Calif.

'CALLING NAMES'

TO THE EDITOR:

A footnote to Dan Jenkins' entertaining article, "Calling Names" (Aug. 31) may be in order. My pet peeve about the selection of names for telephone exchanges has always been the use of a state name whose customary abbreviation affects the dialing.

As a former Pennsylvanian, I had to fight hard in New York to resist dialing PA rather than PE when calling a PEnnsylvania number. And now, in Washington, a call to a GEorgia exchange finds me spinning GA instead of GE.

ERNEST STEWART.

Washington, D. C.

'RUSSIAN GENEROSITY'

TO THE EDITOR:

Morton I. Moskowitz in his letter in your columns (Sept. 7) refers to "Russian generosity" in permitting President Roosevelt to sit in the center of the Big Three for their photograph during the Yalta conference. However, Stalin, the revolutionary, is shown sitting on the left of Roosevelt, while Churchill, the Conservative, is to his right.

Might one not conclude that the Big Three were seated according to their political convictions? A. MORRIS.

Brooklyn.

[Mr. Moskowitz ironically protested that the seating of President Franklin Roosevelt in the central place of honor in the famous photograph of the Big Three leaders at Yalta was an important concession made by the Soviets.—*Editor.*]

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THE COVER—From aircraft carriers as well as land bases constant air attacks go on against Communist forces in North Korea. Here ordnance men of the U. S. S. Antietam, carrier with the Seventh Fleet off Korea, hoist detonators to bombs on wings of Corsair fighter-bombers of the carrier's air group. For pictures of what goes on at Air Force jet base see pages 10 and 11.

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Some cave explorers collect bats like these furry specimens.

(Continued from Page 37)

nent of Australia man has left strange symbols and mystic paintings in caves, and in certain South American grottoes some of the most baffling carvings and inscriptions of all time have been discovered. Nor is North America wholly a barren field in this respect, for our Indians and perhaps other races that may have lived here before them left their artifacts and some pictographs under the floors and on the walls of caves. Such odd items as a pair of plaited vegetable-fiber sandals dated by the new radio-active carbon method at 7,000 B. C., have come to light in certain Western caves.

ONLY since the end of the war, Charles E. Mohr, President of the National Speleological Society of America, found the first prehistoric cave painting known to the New World. This is a figure of an Aztec warrior in complete battle dress, done in full color, which Mohr came upon a half mile into the earth from the entrance of a cave in southern Mexico.

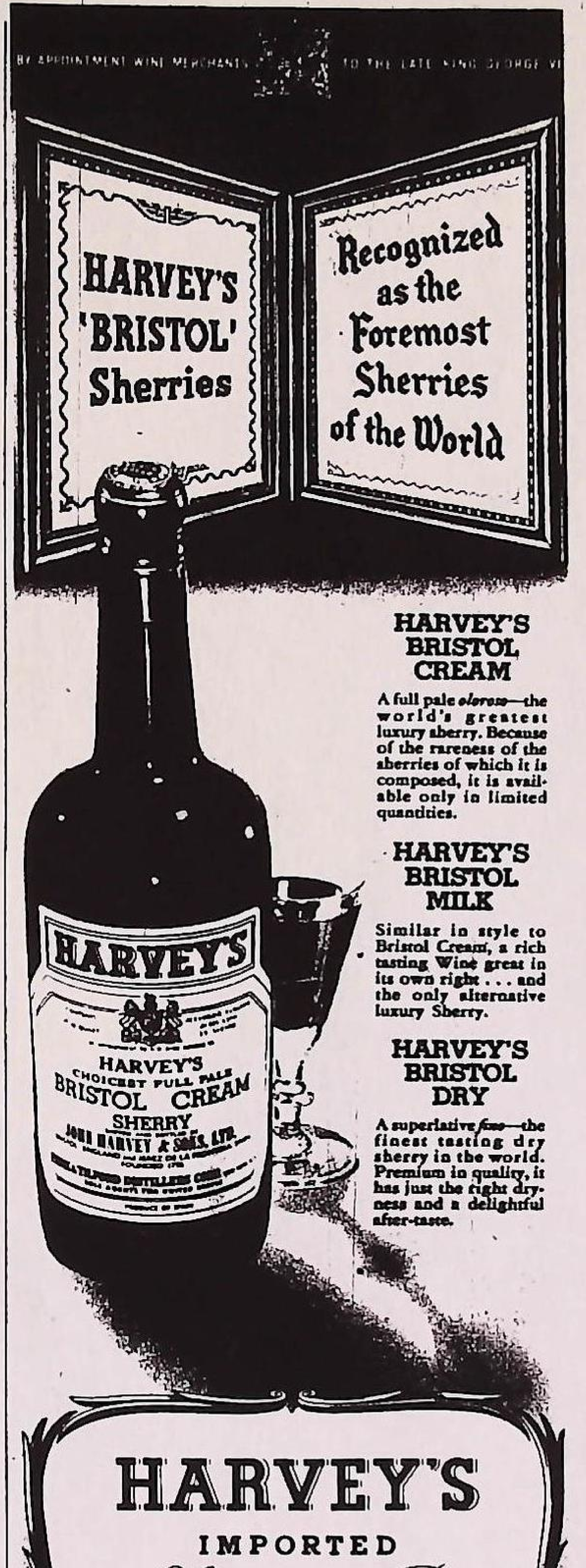
The extraordinary and often unique animal life of caves is perhaps a greater source of wonder to the public than any other aspect of caves. Strange, eyeless creatures crawl and swim about beneath our feet in total darkness forever, unknown to all but a very few specialists. The concept of a whole world of life going on thousands of feet below the surface of the earth is somewhat shocking—at least so it seemed to engineers drilling an artesian well in Alabama when a six inch, eyeless, pink fish spouted up to the surface with the first gush of water.

THE NATIONAL SPELEOLOGICAL SOCIETY has identified, named and listed more than 5,400 caves in the United States, in all states except Delaware, and estimates that there are at least ten times as many still to be discovered. Certain countries where limestone rocks prevail, like England, Yugoslavia, parts of Africa, Malaya and Venezuela, may have a larger number in proportion to their total land surface but it is hardly possible even to estimate any exact totals because a cave is a hard thing to define. One cave may have innumerable entrances, or one tiny pothole just large enough for a man to squeeze through may lead to miles, even hundreds of miles, of passages below. There is a cave in Yugoslavia that contains a museum, a theatre and fifteen miles of railway. There are said to be 156 miles of passages connected with our famous Carlsbad Caverns in New Mexico, and it has been estimated that there are more than 100,000 miles of caves under Kentucky alone.

Finally, who can estimate the extent of the deep underground waterways in which the blind, pink fish swim forever. One scientist has mapped the distribution of some species of these fish, and of blind salamanders, and finds that they extend for hundreds of square miles under the earth.

SPELEOLOGISTS and spelunkers alike have a constant urge to find their way into these underground worlds, both those known to us now and those thousands of undiscovered ones believed to exist. So, on occasions and for their own special reasons, do zoologists, botanists, geologists, mineralogists, archeologists and other specialists. And the tourist has the urge at least to visit and gaze in wonderment, if not to explore.

Possibly the real motivation of all these cave visitors is buried in the caverns of their subconscious. But if you ask them why, you get all kinds of answers, only one of which seems to be shared by many—adventure or curiosity. Perhaps, then, as the National Speleological Society says, caves are the last frontier for the pioneer. Only a few thousand years ago our ancestors undoubtedly viewed the world outside the cave entrance as the first frontier. We probably have had enough of this and just want to return home every so often.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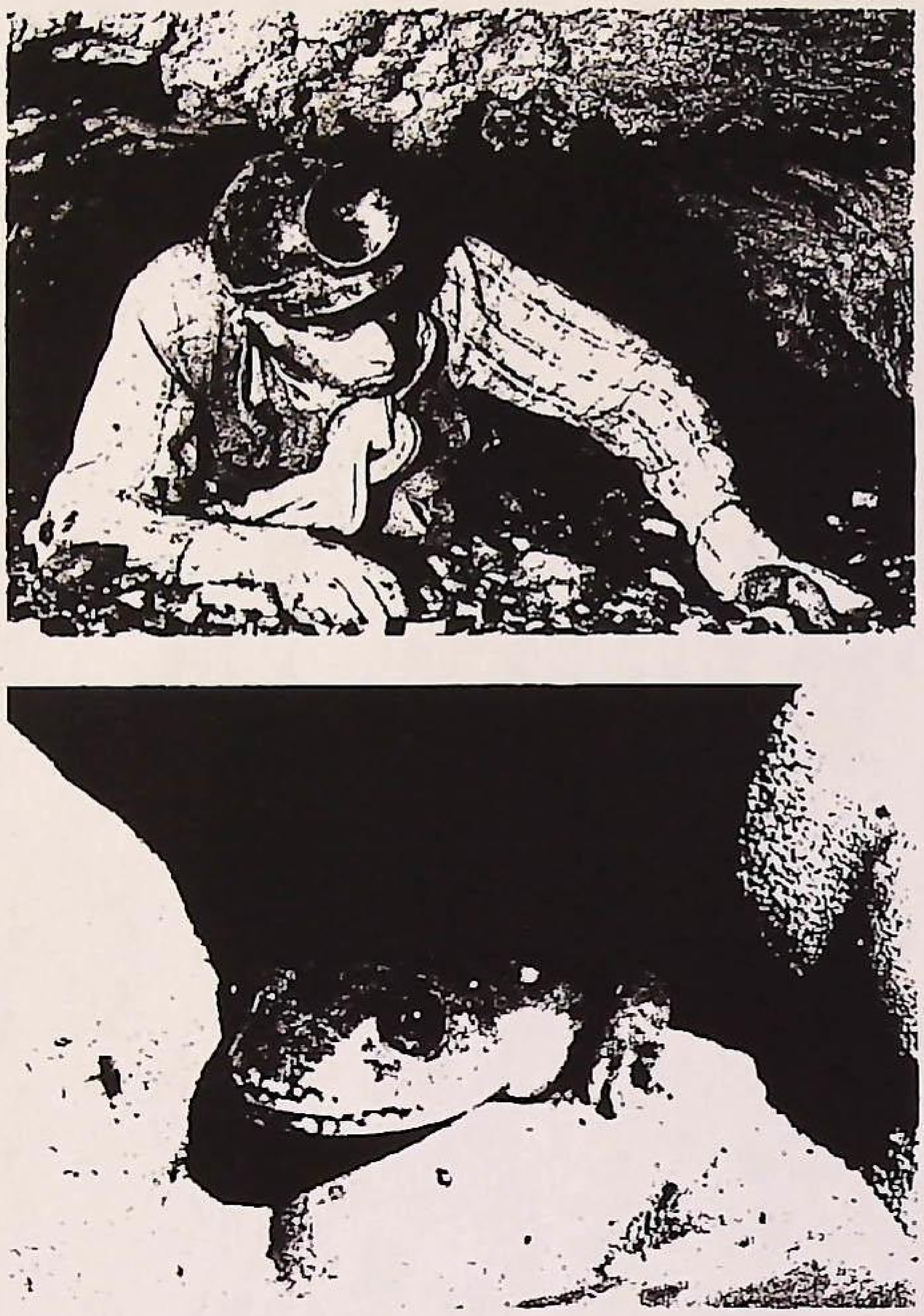
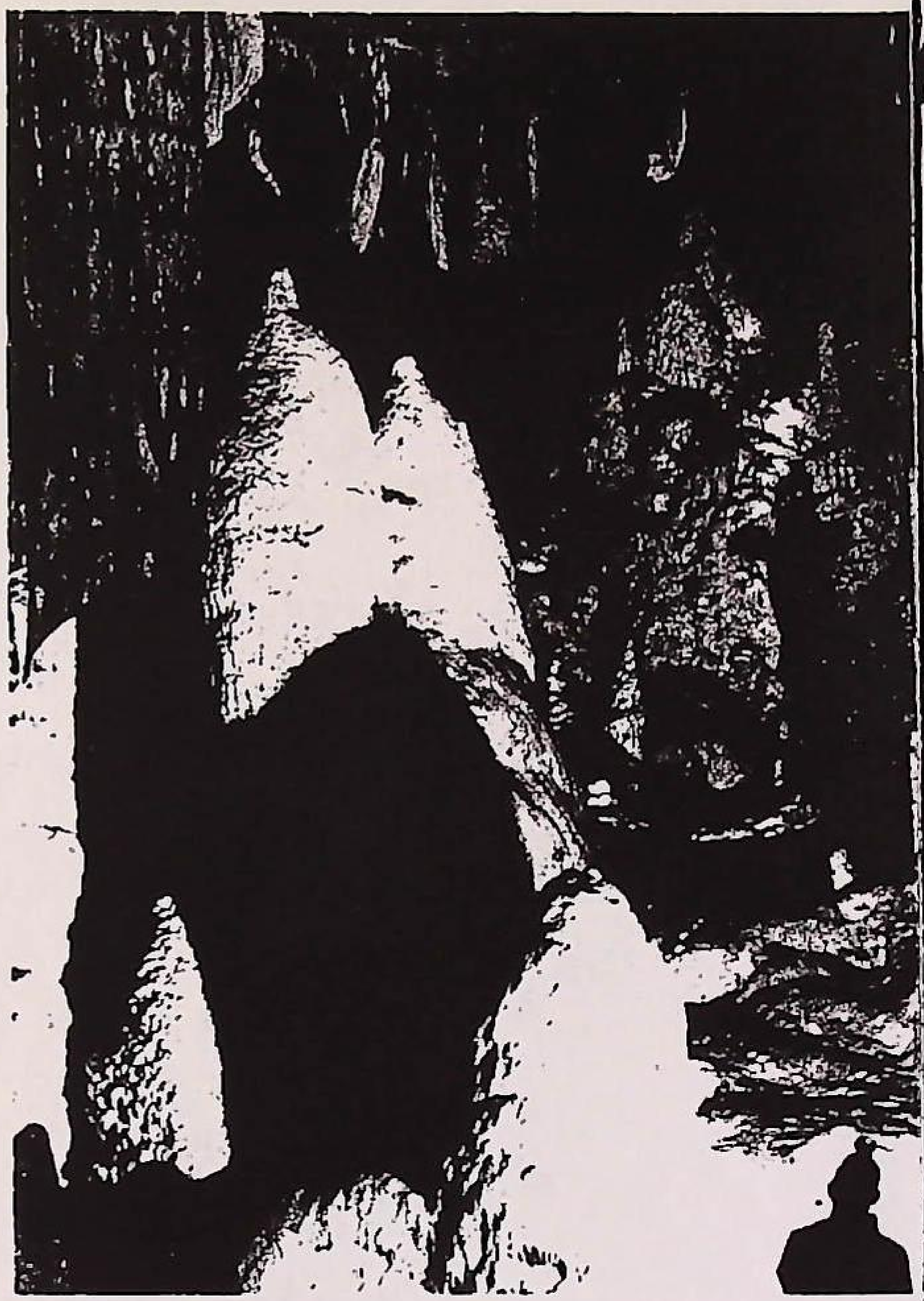


Cave life—A "spelunker" runs up to six feet long, a salamander to six inches.



"The most insensible tourist is impressed by crystal columns standing in ice perfection

Why Men Explore the World of Caves

By IVAN T. SANDERSON

EVERY year a million or so people visit caves in America. Most of them are tourists spending vacation dollars just to "see a sight." But about 2,000 of them are the more adventurous souls who scramble, slide or are lowered into holes in the ground, great or small, for the express purpose of exploring them top to bottom or, as the case may be, from a mountainside entrance to the pitch-dark dead-end of one of nature's labyrinths. These 2,000 are "spelunkers," as they call themselves, who belong to a speleological, or cave exploring, society. There are similar groups in more than half the nations of the world, thirty-two, for instance, in Great Britain alone.

The question that immediately springs to mind is, what is the lure of the caves? (It is estimated that one in every four Americans has visited one.) This is a question that has been asked more frequently of late as a result of fatal accidents in caves of several countries—notably the recent death of Marcel Loubens, French industrialist and speleologist, in a fall while exploring the 1,153-foot Pierre St. Martin fissure in the French Pyrenees.

The reason for cave attraction is not quite so simple as a senior editor of a national magazine once claimed. Admittedly an advanced claustrophobe himself, he dismissed the whole business in Freudian terms as nothing more than the natural desire of man to seek security by re-entering the womb. Now it cannot be denied that man does carry around with him such an unconscious longing, and there does seem to be evidence that his interest in caves increases noticeably during wars and other times of stress and uncertainty. How often have we read of resistance movements or revolutionaries taking to their local caves; today half the Communist forces in Malaya seem to be using the vast caves of that country as their principal hideouts. We also read of banks hiding their records in caves, or hear people express an ardent wish for a deep and isolated hole as refuge against the atom bomb.

But such atavism is not the whole explanation as an analysis of questionnaires filled out by applicants for membership in caving societies has shown. Their answers—fully supported by sample questioning of visitors to commercially operated caves and small boys with a penchant for free-lance cave exploration—gave reasons like these for wishing to go into caves—"for exercise," "for sport," "because they are beautiful," "to collect bats," "to study underground water systems." Almost invariably the answers had a note of false modesty or a curious bravado.

IT would seem as if everybody is born with a natural desire to pop into the first hole that appears in the ground, but is shy of admitting the fact. From this, perhaps, stems the somewhat overbearing demeanor of the "spelunker," and the superior air of the tourist who has just visited a cave. You may have noticed the fluorescent advertising tags for caves flaunted on bumpers of returning automobiles.

The majority of cave addicts give adventure as their principal reason for cave exploring. The slogan of the National Speleological Society of America is "Caves—The Last Frontier of the Pioneer." And though there can be aplenty of adventure, it is not the main drive which sends ordinary citizens to visit the 125 commercially operated caves in this country. Advertising has made it widely known that some of the most beautiful sights in nature are under the surface of our earth. This, plus signs, artistic lighting effects in the caves themselves, and the provision of every comfort and safety for the visitors constitute the greatest inducements.

Yet the basic explanation for the almost universal lure of caves must be sought elsewhere. Caves are mysterious: this cannot be denied. They are also strangely comforting, like a foxhole or a reinforced concrete blockhouse in wartime, or a walled city, or even one's home in peacetime. And hereby, perhaps, arises a clue. Caves are, in fact, our natural homes, for the vast majority of all our ancestors lived in them during ninety-nine one-hundredths of the history of our species.

The consensus of scientific opinion is

IVAN T. SANDERSON, British-born zoologist, author and cave addict is vice president of National Speleological Society of America.

as they stood before man existed."

"Blister-like grottoes are sometimes formed in lava and extensive passageways may be gouged by nature out of almost any rock."

Wonderlands underground appeal to our spirit of adventure and, perhaps, urge to 'go home.'

that man has been around for about a million years, having first become distinguishable from his apelike progenitors at the beginning of the Ice Age. At this point, he almost immediately took to dwelling in caves, especially in the northern hemisphere, in order to survive the ever-increasing frigidity. And he remained in caves until only about ten thousand years ago, almost completing his physical and cultural evolution therein. It is small wonder, therefore, that modern man should retain a vital interest in caves and seize upon the slenderest excuses to revisit them.

If we accept it as natural for us to wish to visit caves, we may approach them in a spirit of keen expectation tempered by overtones of reverence such as we feel when we enter the old churches of our ancestors in Europe or the tombs of the Pharoahs of Ancient Egypt. After all, we have every excuse for wishing to revisit our birthplaces.

CAVES are of four principal types, excluding ice-caves frequently formed in glaciers and on ice caps both by fissures and by melting. Blister-like grottoes may be formed in lava flowing from active volcanoes; quite extensive passages and towering galleries may be gouged out of almost any kind of rock cliff by the action of the waves of the sea, using rocks, pebbles and sand as battering rams and abrasives, and quite respectable caves may be formed when strata of rock are split and then split, in the manner known to geologists as *faulting*.

The vast majority of caves, and all the larger ones, are, however, formed in limestone strata by the slow percolation of water charged with carbonic acid—usually derived from the carbon dioxide of the air above—or other solvents originating in the roots of plants, like tannic acid. This water dissolves the limestone as it passes through tiny cracks and crevices, enlarging them first to little channels, then to tunnels, and finally to holes of dimensions warranting the term caves.

The actual history of any one cave is not, however, quite as simple as this because, once the initial channel is formed, all manner of things may happen. The whole land surface may be raised up so that water no longer flows through the channel, whereupon the cave stops "growing." On the other hand the whole landscape may sink. Then the cave fills with standing water and new forms of rock or minerals may be deposited within it, rather than being dissolved away. Then again, pressure or earthquakes may cause portions of the roof to collapse, and sometimes great masses of clay or silt may be washed into the cave, partially or completely filling it up.

BUT even if none of these things happens and the cave remains moist, all manner of strange formations almost invariably start to form about its ceiling, walls and floor. Long "icicles," or stalactites, of various minerals grow down from the roof and complementary pillars known as stalagmites rise from the floor to meet them. The walls may be completely encased in flowstone, and strange, rimmed pools, brain-shaped masses, objects like flowers, grapes, poached eggs, or even perfect fonts may grow in hidden niches or on unexpected prominences out in the open. The shape, color, size and variety of cave formation is almost unlimited. In one cave in Malaya there is a stalagmite that is over 400 feet tall.

Few people realize that caves may be millions of years old, and thus some of the oldest things in the world are to be found in them. There is always something awe-inspiring about extreme antiquity, and even the most insensible tourist may be impressed by a half mile of crystal columns standing in ice perfection today as they stood before man existed on this planet.

Perhaps it takes a specialist to appreciate fully the implications of a crumbling bone or a solitary tooth a hundred thousand years old dug from the sticky red clay of a cave floor. But nobody can fail to thrill to the announcement that footprints of one of our apeman ancestors, impressed into the damp earth floor of a cave in northern Italy 75,000 years ago, were brought to light and photographed only last year. I have witnessed the rapt expression on the face of an American Indian friend when he was shown a photograph of a footprint of one of his ancestors that had been found on the floor of a newly opened cave in Indiana.

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Why Men Explore Caves

(Continued from Page 25)

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SHAGGY ponies complete with primitive fur saddles and strange harness have been found standing frozen stiff in the sub-zero air of caves in southern Siberia. They have been standing there for over two thousand years—since they were entombed by their masters. In southern tropical Asia there are vast statues of Buddha covered with bat guano; in huge, unexplored caves in Cochin-China and on more than one of the great islands of Indonesia are whole galleries of carved stone gods of completely unknown or forgotten origin in caves deep in what is now uninhabited jungle.

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Even in the ancient conti-

(Continued on Page 39)

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(Sept. 18)	N. Y. U.-Bellevue Medical Center
(Sept. 18-19)	School of Commerce, Accounts, and Finance
(Sept. 18-19)	University College of Arts and Science
(Sept. 15-20)	School of Education
(Sept. 15-22)	Graduate Division of Public Service
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Ivan Sanderson Doubts "Fireball" Was a Meteor

IVAN SANDERSON doesn't think that "fireball" was a meteor.

Ivan Sanderson is a widely respected authority on the unexplained phenomena of science, although he is often at loggerheads with what he calls the Scientific Establishment. Among his many books are "The Continent We Live On," and his just-published "Book of Great Jungles." (Julian Messner). He was asked to try to make some sense out of the strange object in the skies seen by many Americans last week. Mr. Sanderson was on the phone all night with State Patrol desks at the 'landing points.'

By IVAN T. SANDERSON

NEW YORK (NANA) — Shortly before sundown on Dec. 9, a fiery, bright-orange object, or objects, flew from Michigan over the tip of Ontario and Western Lake Erie, and then the Northeast corner of Ohio, apparently landing in a densely wooded area about 30 miles, South of Pittsburgh, Pa.

Its passage was noted by a large number of people on the ground and by several experienced commercial and private pilots.

Bits of it fell near Lapeer, Lorain County, Ohio, and near Midland and Keeksburg, Pa. Something also blew up in the air over Lake St. Clair, East of Detroit-Windsor, rocking planes in the area with sharp shockwaves.

Pin-pointing these observations on the map shows that the object or objects passed in a straight line from somewhere East of Flint, Michigan, over Lake St. Clair to Oberlin and Elyria, near Cleveland, Ohio, in a Southeast-by-Southerly direction and then made a 25-degree turn to the East.

From that point the line of travel was again straight, via Midland to Keeksburg.

There is no possibility of converting this course into any form of geometric curve. The fall of material on the ground pin-points the passage. Meteorites do not make abrupt turns in their direction of flight.

Further, this 'thing'' was seen in Northeast Indiana, a minimum of 120 miles Southwest of its line of travel; over Erie, Penn., which is 95 miles Northeast of said line; and in extreme Western New York and Northern West Virginia. So far no computation of the height at which the thing passed overhead has been made, and the only indication of its size was a statement by a lady in Elyria near Cleveland who saw it, or a part of it, fall into a wood where it set grass afire over a 1,000-ft. area. She said it was as big as a volley-ball.

Thus, we do not know if it was possible for it to have been seen at these distances from its line of travel. But if it was indeed seen at these distances, a number of other odd points arise.

* * *

THE EXACT TIME of the fall at Elyria was 4:44 p.m. Observation of it at Erie was at 4:50 p.m. The distance between the two points is 115 miles as the crow flies. However, there is no evidence that the thing passed directly over Erie; it was seen from there at that time and it may have been seen traveling its straight course which was just 95 miles Southwest at its nearest point. This would be about Salem, Ohio. Salem is 70 miles from Elyria, so that the object took six minutes to travel 70 miles, or only 11.5 miles per minute.

Similarly, the nearest point to Indiana on the thing's line of travel is the town of Utica, Mich., about 25 miles East of Pontiac. This is just 95 miles from Elyria as the crow flies, so that, if this was the point where it was seen from Indiana — at precisely 4:40—it took four minutes to cover the distance, or about 23.5 miles per minute.

Now, should it have been spotted from either or both Northeast Indiana and Erie, either before or after its nearest point of passage, the distances, and thus the speeds, would vary but within only small absolute amounts. Compounding the two distances we find that the thing appears to have traveled along at about 16.5 miles per minute.

So, this thing was a meteor; was it?

The minimum speed of a meteor ever recorded as 27,000 miles per hour and the maximum 144,000 miles per hour, which is to say 7.5 miles per second and 40 miles per second respectively. Since when have meteors or bolides, which is the name now given to meteors that break up in our atmosphere, been ambling along at 16 miles a minute?

* * *

AS EVER, almost within the hour of the observations, a professor of something or other announced that it was probably a meteor or a bolide.

In this case it was a Dr. Paul Annear of Baldwin-Wallace College, and right behind him came a confirmation of his belief by the Pentagon.

Yet, though bolides land almost every day and are ignored or at the most searched for only by enthusiastic amateurs, great contingents of specialists from the armed forces were on the scenes of the falls almost as fast as the State Police.

One of the military "spokesmen" stated for the record: "We don't know what we have here (but) there is an unidentified flying object in the woods." Neither meteorites nor bolides fly; they fall. What's more, they don't just drift in at 16.5 miles per minute.

Then, apart from the odd report of two piles of shredded lead in strips only 1-16th of an in[illegible]

Lapeer, Mich., where the thing was first observed to drop something, and the 1,000-foot fire near Elyria, and the dropping fiery ball and smoke arising from a wood at Keeksburg, there are still other curious features of the whole performance.

* * *

MOST NOTABLE is that meteors are usually first seen between heights of 30 to 60 miles but cease to glow at about 10 miles. But the thing didn't glow steadily, as it appeared and disappeared as it zoomed cross-country. And if it were below 10 miles, glowing or not glowing, it could not have been seen from Indiana, Erie, West Virginia and Western New York unless it were close upon all those points successively.

If it travelled along at only 16 miles per minute at, say, 50 miles up and dropped fiery bits to earth at the three points—Lapeer, Elyria, and Keeksburg—how did it make a 25-degree turn about Cleveland?

In fact the service spokesman was right. it was an object; it was flying, rather than falling; and it has not been identified.

Cave life—A "spelunker" runs up to six feet long, a salamander to six inches

"The most insensible tourist is impressed by crystal columns standing in ice perfection

as they stood before man existed."

"Blister-like grottoes are sometimes formed in lava and extensive passageways may be gouged by nature out of almost any rock."

Why Men Explore the World of Caves

By IVAN T. SANDERSON

EVERY year a million or so people visit caves in America. Most of them are tourists spending vacation dollars just to "see a sight." But about 2,000 of them are the more adventurous souls who scramble, slide or are lowered into holes in the ground, great or small, for the express purpose of exploring them top to bottom or, as the case may be, from a mountainside entrance to the pitch-dark dead-end of one of nature's labyrinths. These 2,000 are "spelunkers," as they call themselves, who belong to a speleological, or cave-exploring, society. There are similar groups in more than half the nations of the world—thirty-two, for instance, in Great Britain alone.

The question that immediately springs to mind is: what is the lure of the caves? It is estimated that one in every four Americans has visited one. This is a question that has been asked more frequently of late as a result of fatal accidents in caves of several countries, notably the recent death of Marcel Loubens, French industrialist and speleologist, in a fall while exploring the 1,151-foot Pierre St. Martin fissure in the French Pyrenees.

The reason for cave attraction is not quite so simple as a senior editor of a national magazine once claimed. Admittedly an advanced claustrophobe himself, he dismissed the whole business in Freudian terms as nothing more than the natural desire of man to seek security by re-entering the womb. Now it cannot be denied that man does carry around with him such an unconscious longing, and there does seem to be evidence that his interest in caves increases noticeably during wars and other times of stress and uncertainty. How often have we read of resistance movements or revolutionaries taking to their local caves; today half the Communist forces in Malaya seem to be using the vast caves of that country as their principal hideouts. We also read of banks hiding their records in caves or hear people express an ardent wish for a deep and isolated hole as refuge against the atom bomb.

But such atavism is not the whole explanation, as an analysis of questionnaires filled out by applicants for membership in caving societies has shown. Their answers—fully supported by sample questioning of visitors to commercially operated caves and small boys with a penchant for free-lance cave exploration—gave reasons like these for wishing to go into caves: "for exercise," "for sport," "because they are beautiful," "to collect bats," "to study underground water systems." Almost invariably the answers had a note of false modesty or a curious bravado.

IT would seem as if everybody is born with a natural desire to pop into the first hole that appears in the ground, but is shy of admitting the fact. From this perhaps stems the somewhat overbearing demeanor of the "spelunker," and the superior air of the tourist who has just visited a cave. You may have noticed the fluorescent advertising tags for caves flaunted on bumpers of returning automobiles.

The majority of cave addicts give adventure as their principal reason for cave exploring. The slogan of the National Speleological Society of America is "Caves: The Last Frontier of the Pioneer." And though there can be aplenty of adventure, it is not the main drive which sends ordinary citizens to visit the 125 commercially operated caves in this country. Advertising has made it widely known that some of the most beautiful sights in nature are under the surface of our earth. This, plus signs, artistic lighting effects in the caves themselves, and the provision of every comfort and safety for the visitors constitute the greatest inducements.

Yet the basic explanation for the almost universal lure of caves must be sought elsewhere. Caves are mysterious; this cannot be denied. They are also strangely comforting, like a foxhole or a reinforced concrete blockhouse in wartime or a walled city, or even one's home in peacetime. And hereby, perhaps, arises a clue. Caves are, in fact, our natural homes, for the vast majority of all our ancestors lived in them during ninety-nine one-hundredths of the history of our species.

The consensus of scientific opinion is that man has been around for about a million years, having first become distinguishable from his apelike progenitors at the beginning of the Ice Age. At this point he almost immediately took to dwelling in caves, especially in the northern hemisphere, in order to survive the ever-increasing frigidity. And he remained in caves until only about ten thousand years ago, almost completing his physical and cultural evolution therein. It is small wonder, therefore, that modern man should retain a vital interest in caves and seize upon the slenderest excuses to revisit them.

If we accept it as natural for us to wish to visit caves, we may approach them in a spirit of keen expectation tempered by overtones of reverence such as we feel when we enter the old churches of our ancestors in Europe or the tombs of the Pharaohs of Ancient Egypt. After all, we have every excuse for wishing to revisit our birthplaces.

Wonderlands underground appeal to our spirit of adventure and, perhaps, urge to 'go home.'

CAVES are of four principal types, excluding ice-caves frequently formed in glaciers and on ice caps both by fissures and by melting. Blister-like grottoes may be formed in lava flowing from active volcanoes; quite extensive passages and towering galleries may be gouged out of almost any kind of rock cliff by the action of the waves of the sea, using rocks, pebbles and sand as battering rams and abrasives; and quite respectable caves may be formed when strata of rock are split and then spilt, in the manner known to geologists as *faulting*.

The vast majority of caves, and all the larger ones, are, however, formed in limestone strata by the slow percolation of water charged with carbonic acid—usually derived from the carbon dioxide of the air above—or other solvents originating in the roots of plants, like tannic acid. This water dissolves the limestone as it passes through tiny cracks and crevices, enlarging them first to little channels, then to tunnels, and finally to holes of dimensions warranting the term caves.

The actual history of any one cave is not, however, quite as simple as this because, once the initial channel is formed, all manner of things may happen. The whole land surface may be raised up so that water no longer flows through the channel, whereupon the cave stops "growing." On the other hand the whole landscape may sink. Then the cave fills with standing water and new forms of rock or minerals may be deposited within it, rather than being dissolved away. Then again, pressure or earthquakes may cause portions of the roof to collapse, and sometimes great masses of clay or silt may be washed into the cave, partially or completely filling it up.

BUT even if none of these things happens and the cave remains moist, all manner of strange formations almost invariably start to form about its ceiling, walls and floor. Long "icicles," or stalactites, of various minerals grow down from the roof and complementary pillars known as stalagmites rise from the floor to meet them. The walls may be completely encased in flowstone, and strange, rimmed pools, brain-shaped masses, objects like flowers, grapes, poached eggs, or even perfect fonts may grow in hidden niches or on unexpected prominences out in the open. The shape, color, size and variety of cave formation is almost unlimited. In one cave in Malaya there is a stalagmite that is over 400 feet tall.

Few people realize that caves may be millions of years old, and thus some of the oldest things in the world are to be found in them. There is always something awe-inspiring about extreme antiquity and even the most insensible tourist may be impressed by a half mile of crystal columns standing in ice perfection today as they stood before man existed on this planet.

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IVAN T. SANDERSON, Broadcaster, zoologist, author and cave addict, is vice president of National Speleological Society of America.

Why Men Explore Caves

(Continued from Page 25)

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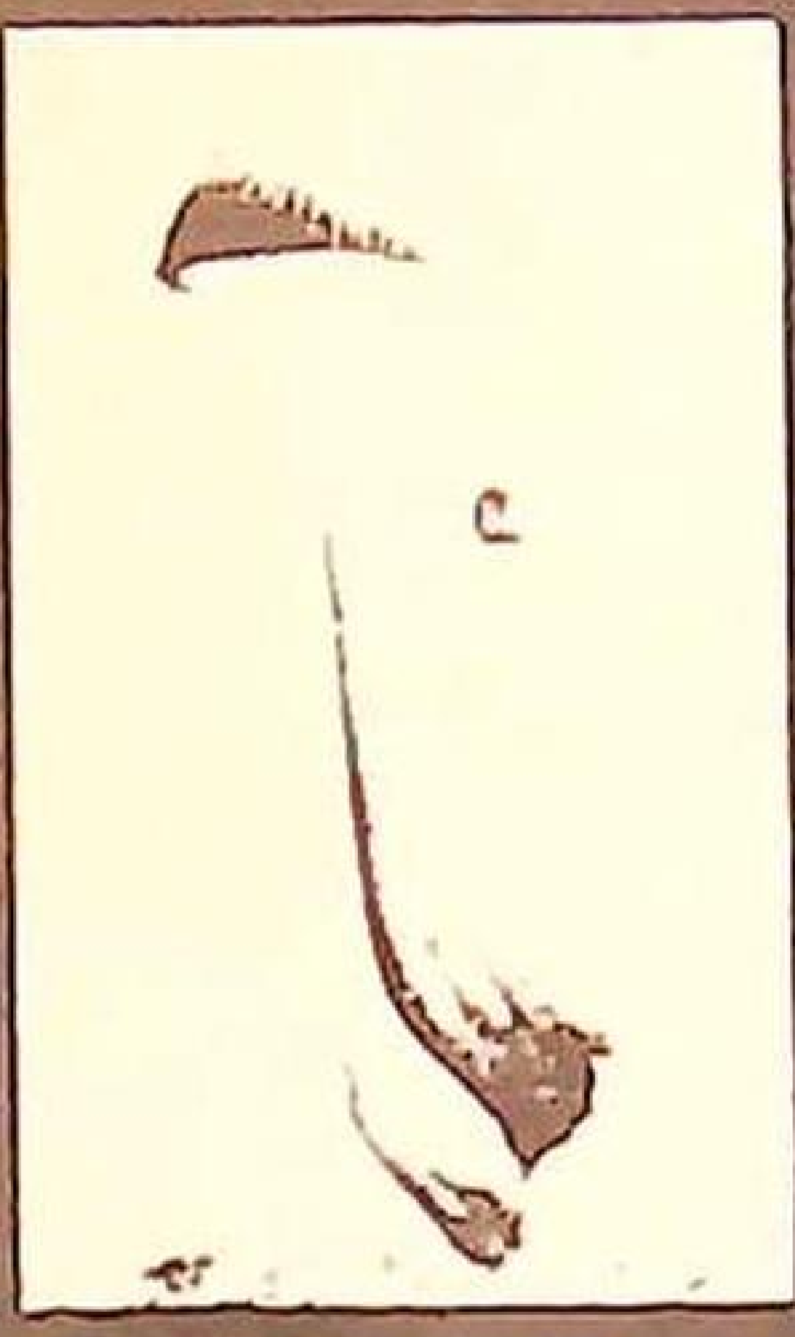

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Even in the ancient conti-

(Continued on Page 89)

Some cave explorers collect bats like these furry specimens.

(Continued from Page 37)

nent of Australia man has left strange symbols and mystic paintings in caves, and in certain South American grottoes some of the most baffling carvings and inscriptions of all time have been discovered. Nor is North America wholly a barren field in this respect, for our Indians and perhaps other races that may have lived here before them left their artifacts and some pictographs under the floors and on the walls of caves. Such odd items as a pair of plaited vegetable-fiber sandals dated by the new radio-active carbon method at 7,000 B. C., have come to light in certain Western caves.

ONLY since the end of the war, Charles E. Mohr, President of the National Speleological Society of America, found the first prehistoric cave painting known to the New World. This is a figure of an Aztec warrior in complete battle dress, done in full color, which Mohr came upon a half mile into the earth from the entrance of a cave in southern Mexico.

The extraordinary and often unique animal life of caves is perhaps a greater source of wonder to the public than any other aspect of caves. Strange, eyeless creatures crawl and swim about beneath our feet in total darkness forever, unknown to all but a very few specialists. The concept of a whole world of life going on thousands of feet below the surface of the earth is somewhat shocking—at least so it seemed to engineers drilling an artesian well in Alabama when a six inch, eyeless, pink fish spouted up to the surface with the first gush of water.

THE NATIONAL SPELEOLOGICAL SOCIETY has identified, named and listed more than 5,400 caves in the United States, in all states except Delaware, and estimates that there are at least ten times as many still to be discovered. Certain countries where limestone rocks prevail, like England, Yugoslavia, parts of Africa, Malaya and Venezuela may have a larger number in proportion to their total land surface but it is hardly possible even to estimate any exact totals because a cave is a hard thing to define. One cave may have innumerable entrances, or one tiny pothole just large enough for a man to squeeze through may lead to miles, even hundreds of miles, of passages below. There is a cave in Yugoslavia that contains a museum, a theatre and fifteen miles of railway. There are said to be 156 miles of passages connected with our famous Carlsbad Caverns in New Mexico, and it has been estimated that there are more than 100,000 miles of caves under Kentucky alone.

Finally, who can estimate the extent of the deep underground waterways in which the blind, pink fish swim forever. One scientist has mapped the distribution of some species of these fish, and of blind salamanders, and finds that they extend for hundreds of square miles under the earth.

SPELEOLOGISTS and spelunkers alike have a constant urge to find their way into these underground worlds, both those known to us now and those thousands of undiscovered ones believed to exist. So, on occasions and for their own special reasons, do zoologists, botanists, geologists, mineralogists, archeologists and other specialists. And the tourist has the urge at least to visit and gaze in wonderment, if not to explore.

Possibly the real motivation of all these cave visitors is buried in the caverns of their subconscious. But if you ask them why, you get all kinds of answers, only one of which seems to be shared by many—adventure or curiosity. Perhaps, then, as the National Speleological Society says, caves are the last frontier for the pioneer. Only a few thousand years ago our ancestors undoubtedly viewed the world outside the cave entrance as the first frontier. We probably have had enough of this and just want to return home every so often.

BROCHURE NO. 4

Suggestions for the Obtaining of larger Zoological Specimens for Scientific Study

By: Ivan T. Sanderson

The following are merely suggestions as to how larger animals may be obtained for scientific study, based on some years of field work on behalf of leading museums and zoos, and information accumulated over many years on hunting and collecting methods employed by others since prehistoric times up to the present day.

The following notes are concerned almost exclusively with forested areas, and primarily with the taller closed-canapy forests both of the equatorial and subtropical regions, and the temperate and subarctic. Quite different methods are normally employed in orchardbush and parklands, savannahs and prairies, and on scrublands and hot and cold deserts. These are noted in passing just in case any such country occurs within the forested areas being investigated.

Mountain forests are somewhat different to lowland forests in that, whether they be multi-tiered or not, the former almost always have a thick undergrowth at ground level, while the latter may often be almost clear below and in such cases as the valleys in the Oregon Coastal Ranges be true Gallery Forests with no foliage at all between a very short ground cover and the first branches some fifty feet up. Higher Montane or Mist Forests present other special problems.

Organization

Before proceeding to discuss the actual collecting techniques, a few words are necessary on the general subject of overall organization. Too often, amateurs attempt collecting enterprises along the lines of "hunting trips". This is disastrous, for continuity is impossible, some half the time is taken up with the bare procedures of living, and if a specimen be obtained it cannot be properly preserved. In fact, without proper and specialized organization any effort is worthless in this field; and, willy-nilly, the enterprise becomes what is commonly, though often somewhat euphemistically, an "expedition". This is itself a specialized activity.

> Note: Aside from any other considerations, no expedition should ever consist of less than three people; and no party in the field should ever be less than three. The significance of this will appear later, but it implies that there will have to be some doubling up of major duties as outlined below if the whole initial party is less than seven.

Departments. It does not matter how you figure it, or how you try to cut corners, the following departments have to be taken care of; and each requires careful planning, the preparation of lists of desiderata down to the last smallest item, budgeting, and, in the case of Nos. 2 to 6, most careful selection at time of purchase; classification; and very special packing. More even then a golden rule, in fact an essential, is that these departments be kept absolutely separate at all times. Further, the same numbers 2 to 6, call for two separate sets of lists. These are:

(1) Equipment - that must at all times be in working order.
(2) Supplies - that are expendable and must be restocked.

Actually, the officer in charge of each dept., even if doubling up, should check his supply lists every day, for items can run away from one in special circumstances, and obtaining fresh stocks may take varying lengths of time, so that reorders have to be placed at the earliest, and the requests sent on their way to the source of supply.

(1) Finance. This should be in sole charge of the leader of the expd, who alone should be able to draw on and disburse monies. However, powers of attorney should be signed before leaving for the field with at least two deputies, so that they may obtain funds should anything happen to the leader. Considerable cash, in small change, local currency, should always be carried. A set of books should be kept, and a daily record of expenditure balanced at least once a week against petty cash. There should be an audit after the work is over.

(2) Transport. After the means of transport have been mutually agreed upon by the expd personnel and the sponsors, the entire emplementation throughout the trip should be assigned to one officer, and he be made responsible for it. The whole enterprise depends on your transport, and there just cannot be breakdowns (which there will be) that cannot be fixed, or for which alternatives have not been provided.

(3) Commissariat. This includes also what is commonly called on an expd. "household", being housing, bedding, lighting, as well as food and the means to prepare it. Once in the field, this really becomes the most important not only because good regular meals are needed, and dry camping conditions maintained, but simply because a great deal of time, and at the most important times of the day, are otherwise wasted by the collectors. In fact, there should always be a paid employee to handle this department; and it alone.

(4) Collecting. (For this, see below.)

(5) Preserving. (For this, see my separate brochure No. 5).

(6) Recording. One senior member of the initial personnel should be assigned before going into the field as Recorder. This individual should assemble, pack, and maintain his own equipment and supplies. He may do the technical recording of the Preserving on behalf of its operatives, but his more essential work is to keep a diary, and be responsible for the investigation of the environment and everything in it other than the actual animals being collected. Also, he should handle the mail, and write all reports, even for the Leader, if he is not himself that person. Finally, he should be assigned all the writing of stories, news-releases, and other material after the expd, and even the preparation of scientific papers if he is one of the scientists. His records must be kept separate from those of the technicians doing the Preserving.

(7) Public Relations. This is a great deal more important than is generally supposed, as it includes legal matters, official contacts, public relations, promotion, and publicity, or the suppression of same. The officer responsible need not bea member of the Field Party. The ideal is to have somebody handling this dept. at the nearest point where normal living conditions obtain, to act as executor of several matters such as reorders of supplies, communications, and so forth. If not, he or she may be at home. In this case the leader will have to handle all matters in the field but report in detail regularly on these matters, as separate from other reportage. The PR man should be kept as fully informed as possible of everything throughout, and as fast as possible; and should receive all reports or copies of reports regularly and every time a mail is sent out of the field.

We would stress that an Expd. can not get along without these seven separate departments of activity or without maintaining all of them with the strictest discipline and self-discipline. Records are more important than specimens; and without them the whole enterprise may at any moment collapse and become an entire waste of time. Also, without them at the end, the enterprise might just as well not have been initiated in the first place.

Collecting

Methods of obtaining wild animals, dead or alive, were initially developed in prehistoric times as we know from cave-paintings. Many of these original methods are still in use and are the most effective. However, since the introduction of firearms, and more especially and more recently that of stun-guns, odorless gases and poisons, and even more particularly of baits founded on sexual attraction, the picture has changed considerably.

There are almost endless variations to each of the methods listed below but these details need not concern us (in the case of ABSMs) except in a few cases. It is my personal opinion that in this case none of the active methods will work due to the nature of the creatures, though walking-up by tracking might work. It is also very doubtful that trapping would be effective except with spring-guns, large bear-traps, or drop-logs or spears. Netting, per se, would be useless and unless the nets were manned at all times; though a thrown net might be very effective in a face-to-face encounter if the operator were very skilled and experienced. I personally have my doubts about poisoning, at least without most careful baiting.

Collecting methods in the widest sense -- i.e. methods of obtaining larger wild animals dead or alive -- fall under two major heads and seven subheads as follows:

I. ACTIVE

(1) Walking-up (Tracking, Drifting, Stalking, etc.)
(2) Riding-down (to Shoot, Slash, or Lasso.)
(3) Driving (into nets, keddahs, off cliffs, into water, etc., by beaters, fire, gas or flooding.)

II. PASSIVE

(1) Netting (previously strung nets to entangle)
(2) Trapping (pitfall, drop-log, gin-trap, nooses, etc.)
(3) Poisoning (by food, water, or gas.)
(4) Baiting (i.e. "Waiting" for animals to be attracted to you by curiosity or baits, to then be shot or stunned)

I will now discuss each of these, seriatim, with special reference to (a) forested conditions, and (b) the supposed nature of ABSMs, giving some recorded examples of occurrences that are pertinent to our real problem.

> IT CANNOT, HOWEVER, BE OVERSTRESSED AT THIS POINT THAT WE ARE HEREIN CONCERNED WITH THE OBTENTION OF SPECIMENS FOR SCIENTIFIC EXAMINATION -- *NOT* WITH MERE HUNTING, FOR SPORT, FOOD, OR TROPHIES.

The two objectives are entirely different and opposed, and matters that may be highly effective in one case are useless in the other. Further, *we must not forget* that, in the case of ABSMs, we may more than likely be dealing with creatures that have all the phenomenal instinctual efficiency of other animals combined with what may even be a very high degree of intelligence, and commonsense of the human. Also, while they have been "warred upon" for millenia by Man, they are not customarily (or "used" to being) hunted, which provides them with even more special faculties. This needs explanation.

Behaviour of wild creatures, animal and human. Much work and observation has now been done on this, and the findings turn out to be almost exactly the opposite of what had been previously supposed. It used to be supposed that all animals could be divided into two classes: The Hunted, and The Hunters; the first being herbivorous, the second carnivorous. Further, it was assumed that the first were cautious, wary, and nervous; the latter bold, self-assured, and indifferent to lesser creatures. This turns out to be utterly wrong. Lions may faint at the sight of flapping laundry, but lie down back to back with an antelope of a kind on which they customarily prey. Some of the ox tribe are bold and totally indifferent to hunters and very aggressive, while a jaguar may bolt if you shout at it.

BROCHURE NO. 4

The really mysterious thing that has been discovered is that among both hunters and hunted there are two types of behaviors: there are those that are "used" to being hunted or attacked, and those that are not. But even more extraordinary, it now transpires that the former are often the most blasé, while the latter are almost invariably the most nervy, cautious, and flighty.

Two examples will suffice to explain this. The first, of an animal used to being hunted, was a herd of large gazelle grazing on a savannah which were being stalked by a Cheetah. The gazelle sentinels spotted the cheetah early but went back to grazing. When the cheetah rose and made his final dash, the gazelle herd simply parted to let him through but one sickly gazelle took off in panic. The cheetah went straight for this, overtook it rapidly, killed it, and lay down to feed. The rest of the gazelle herd went back to grazing, and never even moved.

The other example is that of human (or subhuman) behavior. There was a dwarf race of the Australoid race indigenous to the island of Tasmania. They were virtually without culture and at such a low level that they were classed as a subspecies of humanity, and their numbers rapidly declined after the arrival of the whiteman. Then they became troublesome by raiding stock and farmsteads, and it was decided to clean them all out of a peninsula. Thousands of armed men strung out across the head of this peninsula, and walked almost shoulder to shoulder out to its tip. Not one single Tasmanian was seen. That fall there was a drought, and not less than five hundred of them came out of that peninsula looking for a hand-out! Tasmanians were not "used" to being hunted.

No more need be said of the facts but it must be stressed that ABSMs have nowhere, ever, been official "game" and so lack the "attitude of resignation" of the gazelle. They are too intelligent for the big carnivores and may possibly even have tamed them since earliest times and let them do their hunting -- if they eat any meat. Thus, we've got a real problem here. Let us therefore examine and try to assess the value of the seven types of collecting in face of this problem:

(1) Walking-up. This is, or at least could be in part, feasible. However, the efforts of even the most experienced tracker could in our case be set at nought by the very fact that ABSMs apparently have a far better

and more acute set of senses than any man, and would either just move perpetually ahead, to the side, or even follow the hunter to signal his movements. Even if the hunter smeared himself with ABSM excrement, as elephant hunters do with elephant dung, it would probably do not good in thick forest because the ABSMs coming to inspect him would keep out of sight and later out of reach for they would see him before he did them. "Drifting", on the other hand, and *after* having established a camp and baited, might be worthwhile because an ABSM might try to attack you and you might get a shot.

(2) **Riding-down.** To all intents this is just not possible in the kinds of forests said to be inhabited by ABSMs. And in any case, why ride it down for, if you can see it, you can shoot it.

(3) **Driving.** Similarly, and especially in view of the Tasmanian affair, I personally consider this to be useless, unless one got a group of ABSMs clobbered on a small island and then called out the Marines. Even then, there is much evidence that most ABSMs are almost semi-aquatic, and that they can duck into water, remain a long time below, and swim very fast and far. You'd never get them to go over a cliff even with fire, and they would probably simply come straight back at you and go through your line without anybody either spotting them or getting a shot at one. They could climb any keddah even if they went into it, and they would not become entangled in nets for long. A gas attack would be something else, and might prove effective if you had a lot in a small space but I can't see the humanitarians letting one get away with this procedure.

(4) **Netting.** Although the great apes can be netted and seem no more able to understand the thing than any lower animal, an ABSM with higher intelligence but great strength (and no claws to become entangled in a net and so be pulled out on its struggles) would probably, by biting and pulling, work out of any net in short order.

Of course, if a strung net be under observation from trees all along, and the watchers had powerful lights and guns, one might be obtained but I have a fancy that an ABSM would already know the net had been strung simply by watching the process from hiding or by its superior senses of smell, etc.

(5) Trapping. Here there are real possibilities though I do not think that it would be worthwhile trying to devise or set-up any live-trap. An in-sloping-sided pit might keep the specimen in but again it would probably know of the trap in advance by watching or smell. Also, ABSMs don't use regular paths. Drop cages would never do because of the smell of their metal or of the men building them if of wood. On the other hand, spring-guns, large gins, or drop-logs might be effective but only if a long period of prior baiting had been indulged and the ABSMs had got used to prowling around at night to pick up said bait (which incidentally must have both the "come-on" and some desirable edible combined). Novelties such as these traps near your camp might fool the ABSMs once they had gotten used to your smells and sounds -- vide: the Booby-Traps used in the war, which fooled even the most experienced infantrymen. There are some most ingenious traps, the worst of which that I know of is an automatic Bolas that is trip-fired and calculated to ensnare and stun anything.

(6) Poisoning. I lay considerable store by this. Today, there are some of the most deadly, tasteless, odorless, and apparently really undetectable chemical poisons available. But even more important, the indigenous natives of many tropical countries have scores of just as deadly vegetable poisons that simply cannot be detected by autopsy after death or by any known chemical analysis. If the Amerinds in B. C. have such, and would divulge them or supply them, real results might be obtained -- but then only after Baiting. Even the most subtle poisons would be avoided by ABSMs unless they had already been "hooked" by baiting, simply because of the smell of the men putting down the bait.

(7) Baiting. This, in my opinion, is the only really sound, valid, and worthwhile procedure in the case of ABSMs. The idea is simply to overcome the creatures' natural caution (by one set of procedures) and then raise their curiosity (by another set) and finally "let them have it" when they overcome their caution and got used to browsing around. How you kill the specimen is of not import but once one shows itself in daylight or in artificial light, let him have it with everything you have available, going for the legs first to prevent its escape.

In the case of ABSMs, it seems to me, that everything is useless unless and until "baiting" in its widest sense and most technical meaning has been put into operation. Once "baited" even some other of the approaches outlined above might become effective, but until and unless you can attract the creatures, you're sunk.

Baiting.

This does not mean simply putting out bait to attract animals. It is almost a science in itself -- in fact, it is a science and a very extensive and complex one (vide: a most extremely good article by one Fred Bruemmer in, of all publications, CAVALIER for July, 1961 entitled "Killer King of the Rat Catchers". So important is this article that I am appending a photocopy as an appexdix to this paper). And do not forget that rats, while almost as intelligent as men and having far better genetic instincts are still far, far behind the instinctual-intellectual abilities of an ABSM.

Professional "Baiting" entails several separate operations. These are in substance:

(1) Preparation, before entering the field. The more of these suggestions that can be followed the better and the easier it will be for all concerned, and the faster and more efficiently will the desired results be achieved. However not all of them can always (and sometimes none at all) be achieved. Yet, every point so taken care of, adds immeasurably to proven successes. I will describe the ideal, and leave it to you to do the best you can. It falls under three heads:

(i) Personnel. Nobody should "take a bath" for at least a month before going into the field. This does not mean that bathing is disallowed, but first and foremost no soap, detergent, or anything else should be used on the skin and especially on head hair. Such, remove the natural oils which protect us from funguses and other parasites, and deter blood-sucking insects from biting. (It is dirty clothes that encourage ticks, lice, fleas, bugs, etc.) A thorough physical examination should be made medically before leaving, and all medicaments should be closely sealed into a container that has been sterilized, and externally immunized by rubbing with animal grease. (Wooden boxes are preferable, with tarred-canvas hinges). If you feel "dirty", wash with mud and/or some animal fat or pure grease. Wash teeth with tablesalt, or better, dry Bicarbonate of Soda.

(ii) Clothing. Also all personal effects. Try to eliminate all metal, artificial rubber, and artificial fabric such as nylon, dachron, etc. Anchor everything in running freshwater for at least 12 hours; then dry over a wood fire; do not "iron". Most thermoplastics are inert and odorless and may be used but leathers (especially well greased with animal fats) are always preferable. Natural rubber is ok if thoroughly soaked and all surface dye removed.

(iii) Equipment. As far as possible, eliminate all metal. That which cannot be so disposed of or for which non-mental substitutes cannot be found, should in all cases be wrapped, encased, or sealed in leather that has been well greased with animal oils. Avoid above all, all mineral oils, even kerosene. Electric battery lights, even if heavier, are better than kerosene lamps, but must be again greased and packed in animal oil-soaked wrappings. Aluminum is far better than iron, as it does not have anything like the odor even when corroded. (We once even used earthenware cooking utensils, wooden spoons, and flint knives for a trial and obtained quite noticeable results). That metal which you do take, ought to be brazed and then buried in damp earth, and finally scoured with sand.

The objective is to get rid of as much metal as possible and all mineral oils. Even belt-buckles, cigarette lighters, and other such small items can make a great difference. Machetes, guns, lamps, and so forth have to be of metal but leather coverings, wooden boxes, and animal oils in most part counter-act their odor. (Metal, apart from some native gold and copper is not known in Nature and it has a stronger odor to animals than anything else, although we cannot even detect it.)

(2) Camp Site. It may sound somewhat illogical but it has to be said that this is almost invariably in great part "instinctive" -- whatever that may mean. The site must of course be as near to good water as possible but, apart from that, you have to follow your senses. Some sites just "look good", others don't; and in a high percentage of cases of the former you will find that they look good also to animals. The invariable clue to this latter is whether there is an abundant small fauna of insects, snails, frogs, etc. If these are numerous, you may be sure that the smaller, medium-sized, and finally the larger animals will be around.

I can offer only two other suggestions anent this. The first is that the camp should be in a depression and as far as possible surrounded by high land and thus protected from all winds. Amateurs, and especially hunters and White Men in particular have a mania for "sunlight, air, a breeze, and a view". All are redundant, useless, and actually a deterrent to both Baiting and Hunting since they cloy the senses. You can sometimes hear a twig snap in a hollow when there is half a gale blowing above the surrounding hills.

Secondly, the location should be as thickly covered with foliage as possible and have as much ground-brush as possible all around. This latter can be cleared back, and then paths cut through it but all of these should have an initial "S"-Bend in them, so that animals can come up real close without being observed, and watch you.

(3) Behaviour, at camp, for at least the initial two weeks should be extremely free and easy. You can make as much noise as you like, even to playing a radio or phonograph, smoke, and above all cook on wood. Don't go out of camp for the first few days and try to confine speech to talking, not either shouting or above all whispering. The last carries much farther than talking and, being of higher frequency, is more disturbing to animals.

Urinate and defecate freely and widely all around the camp on open ground; and brush teeth, and throw out slops widely (but don't use soap of any kind.) Above all, throw all table scraps and garbage (other than paper and artificial dejecta) all around and as widely as possible.

After a few days, you may start wandering off, moving very slowly (i.e. "drifting") from the camp at dawn and dusk. As far as possible refrain from chopping wood and, if you must, try and avoid hitting the bases of big trees -- they ring like drums although we often cannot hear them do so. Change clothing as you want but soak them in running water, bury, and then dry over wood fires.

(4) Baiting. After about a week you may start your professional baiting as an extension to your garbage and other more personal disposal. Dot this about in obvious places, on the ground, a few feet up tree trunks, and especially on rocks alongside the stream or river. Inspect each bait casually twice a day and note any footprints around where it was placed --(such areas may be cleared). Small animals will invariably take all bait in due course but if larger ones are about they will almost invariably leave tracks or other visual evidence.

At this point such devices as trip-wires, with or without set cameras attached, snooperscopes, buzzers, flashlights, and so forth may be mounted but the most extreme care must be taken in doing this. Again, it is the metal that will cause you the greatest trouble. Also, if any of these devices is "tripped" you may set yourself back to the beginning, or the quarry may leave the district altogether. Such mechanical devices can be very alarming to wild creatures: on the other hand, they may totally ignore them.

As is stressed in the article on rats attached, the most important of all baits is (or are) items that have a sexual attraction to the creatures desired. It has now been discovered that our, and animals' sense of smell is the most powerful that we have, and that "sex" is based on smell. Thus, probably the best "Attraction-Bait" would be the menstrual flow of a female ABSM. The next best might be that of a woman. Candies made in Germany that incorporated the saliva, armpit secretions, and sperm or vaginal fluids of young men and girl volunteers were fed unknowingly to college students. Within hours almost all the eaters had somehow sought out the donors of these body essences and were in bed with them, though they did not know of their existence previously, and could not explain their actions. Some such "essences" should above all be obtained.

Once these attraction baits have been placed about, desirable foods should be added to them. For some extraordinary reason, there are a few items (some of them more or less inedible to us, or at least tasteless) that hardly any living creature can resist.

Among these are:

- Over-ripe melon rinds
- Fresh, coconut pith
- Whale-oil Candlewax
- Monkey-fat
- Rotten bacon rubbed with Fennel
- Catnip
- Chicken guts
- The little round red West Indian Bird-Peppers.

Why any of this should be, nobody has so far satisfactorily explained but almost all successful trapping has been achieved with one or other of these -- and mostly coconut. Bananas are also apparently very attractive, especially outside the tropics.

In all cases you should break and bite into the bait yourself and then scatter the rest around as if abandoning it. This will get the animal used to your smell and may also do something else. This is very important.

The Gypsies have always trained all manner of animals by spitting in their mouths and making them swallow it. I have myself -- and innumerable other animal people have also -- used this method and it seems never to fail, even for or with wild and apparently intractable animals. It is my personal belief that it is an extension of the "kissing" bit in our sexual play, and the transference of chemicals from one body to another that plays such a large part in "sex" as we call it. (Do not forget that copulation is not primarily for the purpose of procreation, but for such an interchange.) The process is intra-specific as well as inter-sexual.

(5) The Kill. If and when the baiting is successful, a clean kill must be made. If this fails, all other specimens will probably take off for the hills. If, however, a specimen is killed (or stunned) instantly, it is a very curious fact that not only its mate and family may come around and hang around for a long time but that others may appear that have not been seen before, or even been in that vicinity before. It would seem, in fact, that as with Weasels and some other animals investigated, what we may call "funeral rights" are actually de rigure among animals. Death rather than alarming the others, seems in a strange way to attract them, provided they are not themselves alarmed.

If the killing is messy, or an animal is wounded, you should look out for an attack, at least from its mate. The Primates can be extremely vicious in this, and most persistent. And don't forget that Primates have brains like us and that an ABSM probably is one of us.

A Note on Guns.

Among "sportsmen" and professional hunters the world over, there is a great preference for, and almost 'holy' belief in, rifles. They are most inefficient and dangerous mechanisms, and for collectors they are almost useless.

A rifle, and especially a high-powered one, fired at too close range will drive its solid bullet right through even a large animal without doing the slightest harm. (Explosive-nosed bullets are both illegal and useless because they simply blow the thing to bits, and the bigger it is, the smaller the bits.) A rifle is also unwieldy in a forest or any other confined space, and actually it is rather slow of operation, because of sighting.

A Submachinegun is very effective especially if it has a short barrel and a large carbine. With it you can chop down the biggest target and then administer a decent Coupe de Grace.

But, the very best weapon to carry -- and at all times -- is a 12-Bore (or Gauge), double-barrelled shotgun. Repeaters, or pumpguns are, frankly, not yet sufficiently perfected to be reliable at all times in damp forest conditions. One barrel should be highly choked.

The Cartridges carried should have an extra-heavy charge of smokeless (not Black) powder, and contain ball-shot. This is the largest size lead balls that can be fitted into a standard 12-bore cartridge. With an extra-heavy charge, only about three can be so fitted. This carries a terrific hitting power, and will bowl over a charging buffalo and blow the front of its head in at about twenty paces. No bullet from a rifle can do this. Also it kills.

Apart from this, an automatic side-arm should be carried for protection -- and this is better on the front of the left hip if you are right-handed -- and a machete in a leather scabbard behind the left hip. Spare cartridges should be in the right trouser pocket.

For God's sake, don't ever wear a jacket, or anything that hangs outside your belt and which may therefore snag your hands in reaching for amunition, side-arm, or machete. Your life depends on this.

Any knapsack should be anchored to your midback so that it cannot possibly slew around whatever movement you make. It should contain matches, knife, a small lense, plastic tubes, and first-aid kit.

Forest "hunting" is not like that in any other country and very often you cannot even turn around if attacked, let alone bring a gun around. You will need your sidearm and machete for in fighting and protection if attacked; though, an attack from a mere animal is really not known -- it is all tripe written for thriller magazines. It is men and Humanoids that you have to look out for; and it is Humanoids or even Hominids that you will be hunting.

--------(ends)--------